Supreme Court of the United States

OCTOBER TERM, 1954

No. 3

UNITED STATES OF AMERICA, APPELLANT,

v.

E. I. DU PONT DE NEMOURS AND COMPANY, ET AL.

APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

DECIDED JUNE 14, 1956

PROBABLE JURISDICTION NOTED OCTOBER 10, 1955



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APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS

VOL. IX

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No. 242—Memorandum dated August 5, 1940, from T. A. Nalle to E. Doremus	3951	6148
No. 243—Unsigned Memorandum dated May 15, 1918, entitled "Our File FO Chevrolet Motor Co. —FK"	3952	6149
No. 244—Excerpt from Report of du Pont Fabrikoid Company to C. W. Phellis, General Director of Sales, for the month of November, 1919, dated January 2, 1920	3955	6152

duPont Exhibits:	Original	Print
No. 245—Excerpt from Report of the du Pont Fabrikoid Company to F. W. Pickard for the month of March, 1919, dated May 8, 1919	3956	6153
No. 246—Unsigned memorandum, undated, entitled "Buick Motor Company"	3957	6154
No. 247—Excerpt from Report of Fabrikoid Division to Executive Committee for November, 1922, dated December 18, 1922	3961	6158
No. 248—Excerpt from Report of Cellulose Products Department to Executive Committee for October, 1923, dated November 23, 1923	3962	6159
No. 249—Memorandum dated July 15, 1936, from A. L. Brown to T. A. Nalle	3963	6160
No. 250—Dollar Sales of Coated and Combined Fabrics to the Chevrolet Motor Company—1922 to 1935 (du Pont)	3964	6161
No. 251—Letter dated July 23, 1918, from W. P. Chrysler to J. A. Haskell	3965	6162
No. 252—Memorandum dated July 28, 1920, unsigned	3967	6164
No. 253—Excerpt from Report of Fabrikoid Division to Executive Committee for January, 1922, dated February 15, 1922	3968	6165
No. 254—Excerpt from Report of Fabrikoid Division to Executive Committee for October, 1922, dated November 17, 1922	3969	6165a
No. 255—Excerpt from Report of Fabrikoid Division to Executive Committee for March 1923, dated April 23, 1923	3970	6166
No. 256—Excerpt from Report of Fabrikoid Division to Executive Committee for May, 1923, dated July 2, 1923	3971	6167
No. 257—Excerpt from Report of the Fabrics Division to Executive Division for March 1929, dated April 19, 1929	3972	6168
No. 258—Excerpt from memorandum dated September 21, 1931, unsigned, to Wm. Richter, re Fabrikoid Division, Monthly Report—August, 1931	3973	6169
No. 259—Dollar Sales of Coated and Combined Fabrics—The Buick Motor Company—1919 to 1933 (du Pont)	3974	6170
No. 260—Dollar Sales of Coated and Combined Fabrics to the Cadillac Motor Car Co.—1921 to 1926 (du Pont)	3975	6171
No. 261—Letter dated April 10, 1918, from du Pont Fabrikoid Company to Olds Motor Works	3976	6172
No. 262—Letter dated October 12, 1918, from Chas. L. Petze to J. A. Haskell	3977	6173
No. 263—Dollar Sales of Coated and Combined Fabrics to the Olds Motor Works, 1922 to 1930	3979	6175

duPont Exhibits:	Original	Print
No. 264—Letter dated February 8, 1922, from E. I. du Pont de Nemours & Company, Fabrikoid Division, to C. O. Miller (Oakland Motor Car Co.)	3980	6176
No. 265—Dollar Sales of Coated and Combined Fabrics to the Oakland Motor Company, 1922 to 1933 (du Pont)	3981	6177
No. 266—Letter dated July 6, 1925, from John T. Allmand to E. I. du Pont de Nemours & Company	3982	6178
No. 267—Letter dated July 17, 1925, from John T. Allmand to H. A. Lindsey (du Pont)	3983	6179
No. 268—Letter dated September 1, 1925, from N. P. Wescott to J. Henry Smith	3984	6180
No. 269—Memorandum dated September 29, 1925, from H. A. Lindsey to E. R. Cathcart—Manager Fairfield Plant	3986	6182
No. 270—Memorandum dated September 30, 1925, from J. Henry Smith to H. A. Lindsey, Dir. of Sales	3987	6183
No. 271—Memorandum dated November 20, 1925, from Fabrikoid Division to W. F. Allen, General Manager, entitled Report for October 1925	3988	6184
No. 272—Memorandum dated June 22, 1926, from Fabrikoid Division to W. P. Allen, General Manager, entitled Report for May 1926	3989	6192
No. 273—Memorandum dated October 30, 1931, from J. J. Moosmann to Mr. J. Thompson Brown	3997	6198
No. 274—Memorandum dated March 25, 1926, from Hamilton Bradshaw to M. N. Nickowitz	3998	6199
No. 275—Memorandum dated May 21, 1929, from Sales Mgr. Fairfield Automotive Products, to M. N. Nickowitz	3999	6200
No. 276—Excerpt from Report of Fabrikoid Divison to Executive Committee for February, 1927, dated March 27, 1927	4001	6202
No. 277—Excerpt from Report of Fabrikoid Division to Executive Committee for March, 1928, dated April 21, 1928	4002	6203
No. 278—Excerpts from memorandum dated July 24, 1929, from Fabrikoid Division to W. Richter, General Manager	4003	6204
No. 279—Excerpts from memorandum dated March 20, 1929, from Fabrikoid Division to W. Richter, General Manager	4005	6206
No. 280—Undated memorandum from H. S. Plank to E. S. Nickerson	4007	6208
No. 281—Comparison of Passenger Car Production with Possible Potential in Auto Field—11 Months 1930	4009	6210

duPont Exhibits:	Original	Print
No. 282—Potential Existing in Automotive Field for Use of Pyroxylin or Rubber-Coated Textiles as Original Equipment, 11 months 1930	4010	6211
No. 283—Excerpt from Memorandum dated October 19, 1931, unsigned, to Wm. Richter, General Manager, re Fabrikoid Division, Monthly Report, September, 1931	4011	6212
No. 284—Memorandum dated June 13, 1932, from E. S. Nickerson to G. A. Staples	4012	6213
No. 285—Memorandum dated April 18, 1938, from A. L. Brown to G. S. Sherin	4014	6215
No. 286—Memorandum dated January 16, 1934, from A. L. Brown to H. S. Plank	4015	6216
No. 287—Memorandum dated March 28, 1938, from A. L. Brown to G. A. Staples	4017	6219
No. 288—Memorandum dated May 15, 1939, from A. L. Brown to E. R. Cathcart	4018	6220
No. 289—Memorandum dated May 23, 1939, from A. L. Brown to T. A. Nalle	4019	6221
No. 290—Letter dated June 17, 1940, from Fabrikoid Division to Fisher Body Detroit Division	4020	6222
No. 291—Memorandum dated January 20, 1947, from T. A. Nalle to A. L. Brown	4021	6223
No. 292—Unsigned memorandum dated January 20, 1947, to C. A. Alt re "Fisher Body Division—Convertible Top Material"	4022	6224
No. 293—Memorandum dated January 24, 1947, from M. N. Nickowitz to W. S. Lynch—Purchasing	4023	6225
No. 294—Memorandum dated March 25, 1947, from A. F. Schildhauer to A. L. Brown	4024	6226
No. 295—Office Trade Report #2 dated January 27, 1947, from M. N. Nickowitz	4025	6227
No. 296—Memorandum dated October 10, 1949, from A. L. Brown to R. C. Williams	4026	6228
No. 297—Dollar Sales of Coated and Combined Fabrics to Fisher Body Company—1923 to 1949 (du Pont)	4029	6231
No. 298—Yardage Sales of Coated and Combined Fabrics to Fisher Body Company—1923 to 1949 (du Pont)	4030	6232
No. 299—Excerpt from Report of the Fabrikoid Division to the Executive Committee for April 1928, dated May 26, 1928	4031	6233
No. 300—Memorandum dated March 7, 1940, from A. L. Brown to T. A. Nalle	4032	6234
No. 301—Memorandum dated June 5, 1940, from W. W. Kaminsky to T. A. Nalle	4033	6235
No. 302—Fabrikoid and Rubber Trade Report dated November 25, 1940	4034	6236

duPont Exhibits:	Original	Print
No. 303—Memorandum dated November 20, 1940, from A. L. Brown to T. A. Nalle	4035	6237
No. 304—Memorandum dated December 20, 1940, from A. F. Schildhauer to F. J. Brannigan	4036	6238
No. 305—Dollar Sales of Coated Fabrics to Yellow Truck & Coach Co.—1927 to 1943, inclusive (du Pont)	4039	6241
No. 306—Yardage Sales of Coated Fabrics to Yellow Truck & Coach Co.—1927 to 1943 (du Pont)	4040	6242
No. 307—Dollar Sales of Coated Fabrics to General Motors Truck & Coach Division, 1944 to 1950 (du Pont)	4041	6243
No. 308—Yardage Sales of Coated Fabrics to General Motors Truck & Coach Division, 1944 to 1950 (du Pont)	4042	6244
No. 309—Memorandum dated September 25, 1940, from W. W. Kaminsky to Messrs. E. R. Cathcart and A. F. Schildhauer	4043	6245
No. 310—Memorandum dated May 9, 1947, from T. A. Nalle to A. L. Brown	4047	6249
No. 311—Dollar Sales of Coated Fabrics to Chevrolet Commercial Body Division, 1931, to 1950 (du Pont)	4049	6251
No. 312—Yardage Sales of Coated Fabrics to Chevrolet Commercial Body Division, 1931 to 1950 (du Pont)	4050	6252
No. 313—Excerpt from Report of Fabrikoid Division to C. W. Phellis, General Director of Sales, for February, 1921, dated April 2, 1921	4051	6253
No. 314—Excerpt from Report of Fabrikoid Division to C. W. Phellis, General Director of Sales, for April, 1921, dated June 8, 1921	4052	6254
No. 315—Excerpt from Report of the Fabrikoid Division to the Executive Committee for May, 1923, dated July 2, 1923	4053	6255
No. 316—Excerpt from Report of Fabrikoid Division to Executive Committee for September, 1928, dated October 20, 1928	4054	6256
No. 317—Excerpt from Report of Fabrics Division to Executive Committee for October, 1929, dated November 22, 1929	4055	6257
No. 318—Excerpt from memorandum dated December 17, 1929, unsigned, to Wm. Richter, re Fabrikoid Division, Monthly Report, November, 1929	4056	6258
No. 319—Undated memorandum from C. W. Weaver to J. J. Moosman	4057	6259
No. 320—Excerpt from Report of the du Pont Fabrikoid Company to F. W. Pickard for the month of January, 1919, dated March 6, 1919	4064	6266

duPont Exhibits:	Original	Print
No. 321—Dollar Sales of Coated and Uncoated Fabrics to the Chrysler Corporation, 1925 to 1934 (du Pont)	4065	6267
No. 322—List Price of 6200—50" Fabrikoid	4066	6268
No. 323—Yardage Sales of Coated and Combined Fabrics to the Chevrolet Motor Company, 1922 to 1935 (du Pont)	4067	6269
No. 324—Yardage Sales of Coated and Combined Fabrics to the Oakland Motor Company, 1922 to 1933 (du Pont)	4068	6270
No. 325—Purchases of Coated and Combined Fabrics per Car Basis from GM 151 and DP 259, 263 and 265	4069	6271
No. 326—Letter dated July 5, 1918, signed "Vice President" to F. W. Warner (Oakland Motor Car Company)	4070	6272
No. 327—Letter dated July 5, 1918, from "Vice President" to E. VerLinden (Olds Motor Works)	4071	6273
No. 328—Memorandum dated October 24, 1932, from T. A. Nalle to C. W. Weaver	4072	6274
No. 329—Letter dated June 1, 1953, from "General Counsel" to Ira C. Werle (Eastman Kodak Company)	4074	6276
No. 330—Letter dated June 5, 1953, from M. K. Robinson, Secretary, to Stanley L. Abrams (du Pont)	4075	6277
No. 333—Industrial Sales Trade Report (du Pont) dated January 14, 1932	4077	6279
No. 334—Industrial Sales Trade Report (du Pont) dated May 7, 1934	4079	6281
No. 335—Industrial Sales Trade Report (du Pont) dated May 8, and 9 1936	4080	6282
No. 336—Wilmington F & F Sales Record, dated September 11, 1941	4082	6284
No. 337—Automotive Products Trade Report dated April 13, 1931	4084	6286
No. 338—Industrial Sales Trade Report (du Pont) dated March 16, 1926	4086	6288
No. 339—Automotive Products Trade Report (du Pont) dated December 3, 1930	4087	6289
No. 340—Finishes Division Report (du Pont) dated January 25, 1939	4090	6292
No. 341—Finishes Division Report (du Pont) dated July 17, 1939	4091	6293
No. 342—Industrial Sales Trade Report (du Pont) dated Sep. 20, 1940	4093	6295
No. 343—Memorandum dated January 8, 1940, from L. C. Streeter (du Pont) to C. J. Linahan re Gibson Refrigerator Co. and Frigidaire Division	4095	6297

duPont Exhibits:	Original	Print
No. 344—Excerpt of memorandum dated October 3, 1940 from L. C. Streeter to G. A. Biesecker	4097	6299
No. 345—Memorandum dated March 17, 1947, from W. E. Kreuer to Messrs. J. B. Bullett and C. R. E. Neikle	4098	6300
No. 346—Excerpt from undated, unsigned memorandum entitled "Trade Report Covering Visit of John O'Donnell to Frigidaire on August 1, 1950	4100	6302
No. 348—Memorandum dated April 1, 1940, from R. M. Cook to L. C. Streeter	4101	6303
No. 349—Summary, Refrigerator, Washing Machine and Steel Kitchen Cabinet Meeting, November 10, 1944	4102	6304
No. 351—Industrial Sales Trade Report (du Pont) dated January 23, 1942	4105	6307
No. 352—Excerpt from Trade Report Covering Visit of John D. O'Donnell to Frigidaire on September 14, 1950	4106	6308
No. 353—Memorandum dated April 12, 1949, from SWM to JBL re Pontiac Motor Co. Radiator Hose	4107	6309
No. 354—Excerpt from Development Report of the Rubber Chemicals Division dated May 15, 1950	4108	6310
No. 355—Office Trade Report dated February 8, 1945 to J. A. Turner, Mgr. Chicago Office	4110	6312
No. 356—Salesman's Trade Report (Rubber Chemicals Division) dated January 11, 1950	4111	6313
No. 357—Salesman's Report (du Pont) dated February 27-28, 1940	4112	6314
No. 358—Salesman's Report (du Pont) dated July 22, 1940	4114	6316
No. 359—Office Trade Report (du Pont) dated October 3-4, 1940	4119	6321
No. 360—Salesman's Report (du Pont) dated August 25, 1941	4121	6323
No. 361—Salesman's Trade Report (Rubber Chemicals Division, du Pont) dated October 22, 1950	4127	6329
No. 362—Estimated Annual Requirements of General Motors Divisions and Other Automobile Manufacturers of Case-Hardening and Heat Treating Materials Sold by du Pont and Other Companies respectively, Selected from General Survey of All Users of Such Products by R. B. K'Burg in September 1937	4128	6330
No. 363—Case hardening and Heat Treating—Du Pont's Participation in Supplying Requirements of General Motors Divisions	4129	6331
No. 364—Excerpts from R&H Chemicals Department's "Sales Research and Development Monthly Summary Reports" concerning Chevrolet #30 Salt	4130	6332

duPont Exhibits:	Original	Print
No. 365—Excerpt from the Report for February 1933 of the R. and H. Chemicals Department to the Executive Committee dated March 21, 1933	4131	6333
No. 366—Excerpt from the Report of the R. and H. Chemicals Department for April 1933 to the Executive Committee, dated May 25, 1933	4132	6334
No. 367—Excerpt from Report of D. A. Holt entitled "Metal Cyanide Research," dated September 7, 1933	4133	6335
No. 368—Excerpt from Report of W. M. Gager of the Technical Service Department of the Roesseler & Hasslacher Chemical Company, Inc. entitled "Sodium Cyanide—Its Present Status in the Steel Treating Industry," dated December 19, 1932	4134	6336
No. 369—Excerpt from Report of R. B. K'Burg entitled "Division [R H Metallurgical Division] Progress Report for January 1–July 1, 1931," dated August 18, 1931	4135	6337
No. 370—Report by W. M. Gager dated November 15, 1928, on "Visit to the Delco Remy Co., Anderson, Ind., Thursday, November 15th"	4136	6338
No. 371—Excerpts from Report to Executive Committee entitled "Technical Accomplishments for 1938", dated February 2, 1939	4138	6340
No. 372—Copper Plating Processes—du Pont's Participation in Supplying Requirements of General Motors Division	4139	6341
No. 373—Technical Service Report (du Pont) dated April 25, 1939 by F. F. Oplinger	4140	6342
No. 374—Technical Service Report (du Pont dated June 10, 1941, by H. W. Kennedy	4142	6344
No. 375—Technical Service Report (du Pont) dated October 1, 1940, by H. W. Kennedy	4143	6345
No. 376—Master Report (du Pont) dated January 2, 1941, by H. W. Kennedy and R. R. Bair	4144	6346
No. 377—Technical Service Report (du Pont) dated September 6, 1939, by F. F. Oplinger	4145	6347
No. 378—Technical Service Report (du Pont) dated May 29, 1945, by H. L. Benner	4147	6349
No. 379—Routine Trade Report (du Pont) dated May 8, 1941, unsigned	4148	6350
No. 380—Technical Report (du Pont) dated March 31, 1949, unsigned	4150	6352
No. 381—Memorandum, dated August 17, 1949, from W. A. Marsh (du Pont) to P. R. Lindsay	4152	6354
No. 383—Excerpt of Memorandum dated November 19, 1934, from Arthur G. Weber to J. C. Woodhouse	4153	6355

duPont Exhibits:	Original	Print
No. 384—Excerpt of Memorandum undated, from John C. Woodhouse entitled "Report for the Week Nov. 26-Nov. 28, 1934"	4155	6357
No. 385—Excerpt of Memorandum dated November 23, 1934, from Arthur G. Weber to J. C. Woodhouse	4156	6358
No. 386—Excerpt of Memorandum dated December 12, 1934, from Arthur G. Weber to J. C. Woodhouse	4157	6359
No. 387—Excerpt of Memorandum dated August 2, 1935, from Arthur G. Weber, to J. C. Woodhouse	4159	6361
No. 388—Memorandum dated January 14, 1938, from K. E. Walker (du Pont) to J. C. Woodhouse	4161	6363
No. 389—Excerpt of Memorandum dated January 14, 1938, from K. E. Walker to J. C. Woodhouse	4162	6364
No. 390—Excerpt of Memorandum dated August 8, 1938, from K. E. Walker to J. C. Woodhouse	4163	6365
No. 391—Memorandum dated August 10, 1938, from K. E. Walker to J. C. Woodhouse	4164	6366
No. 392—Excerpt from memorandum dated August 10, 1938, from K. E. Walker to J. C. Woodhouse	4165	6367
No. 393—Memorandum dated September 12, 1938, from K. E. Walker to J. C. Woodhouse	4167	6369
No. 394—Excerpt of Memorandum dated December 23, 1938, from K. E. Walker to J. C. Woodhouse	4169	6371
No. 395—Memorandum dated December 29, 1938, from K. E. Walker to J. C. Woodhouse	4171	6373
No. 396—Memorandum dated March 24, 1939, from "Ammonia Department" to J. D. Eby (Wagner Electric Corporation)	4174	6376
No. 397—Excerpt of Memorandum dated April 2, 1940, from K. E. Walker, to J. C. Woodhouse	4176	6378
No. 398—Excerpt of Memorandum dated May 6, 1940, from K. E. Walker to J. C. Woodhouse	4177	6379
No. 399—Volume of Brake Fluid Purchased by General Motors Divisions from Moraine Products Division (formerly Delco Products), 1936-1951	4179	6381
No. 400—E. I. du Pont Sales of Cellulose Acetate Molding Powder, 1937 through 1947	4180	6382
No. 401—Memorandum dated June 7, 1939, from H. A. Rosley to J. M. Maek	4181	6383
No. 402—Unsigned handwritten memorandum dated September 19, 1939	4183	6385

duPont Exhibits:	Original	Print
No. 403—Unsigned handwritten memorandum, initialled JMM dated October 23	4184	6386
No. 404—Handwritten letter dated 10-30, signed Johnnie Mack to "Stu"	4185	6387
No. 421—Sales of Pyralin, 1916 through 1932 (du Pont)	4187	6389
No. 422—Sales of Pyralin, 1946 through 1950 (du Pont)	4188	6390
No. 423—Extract from Minutes of Executive Committee Meeting #20, December 20, 1915 (du Pont)	4189	6391
No. 424—Excerpt from The Arlington Company Monthly Report to Executive Committee of E. I. du Pont de Nemours & Co., month of January, 1916	4192	6394
No. 425—Excerpt from The Arlington Company Monthly Report to Executive Committee of E. I. du Pont de Nemours & Co., month of February, 1916	4194	6396
No. 426—Excerpt from The Arlington Company Monthly Report to Executive Committee of E. I. du Pont de Nemours & Co., month of June, 1916	4197	6399
No. 427—Excerpt from The Arlington Company Monthly Report to Executive Committee of E. I. du Pont de Nemours & Co., month of October, 1916	4201	6403
No. 428—Excerpt from Minutes of Executive Committee Meeting #145, July 2, 1917, E. I. du Pont de Nemours & Company	4205	6409
No. 429—Memorandum dated January 22, 1918, from Lammot du Pont to Mr. Gudger, et al.	4209	6410
No. 430—Excerpt from Pyralin Department Report for October 1923	4211	6413
No. 431—Extract from Minutes of Meeting #6 Board of Directors, Du Pont Viscoloid Company, August 18, 1925	4212	6414
No. 432—Extract from Minutes of Meeting #13, Board of Directors, Du Pont Viscoloid Company, February 23, 1926	4215	6417
No. 433—Excerpt from "Du Pont Viscoloid Company, November 1926"	4219	6420
No. 434—Excerpt from "Pyralin Department Report, September 1924"	4220	6422
No. 435—Extracts from Minutes of Meeting #11, Board of Directors, Du Pont Viscoloid Company, December 22, 1925	4224	6426
No. 436—Letter dated October 3, 1927, from Zack Phelps to James Lynah	4226	6428
No. 437—Letter dated October 6, 1927 from James Lynah to Z. Phelps	4227	6429

duPont Exhibits:	Original	Print
No. 438—Excerpt from letter of H. Fletcher Brown to Mr. F. K. Kielberg, Managing Director, United Molasses Company, Ltd., dated July 24, 1929	4228	6430
No. 439—Excerpt from Minutes of Meeting of Interdivisional Relations Committee, General Purchasing Committee, General Motors Corporation, September 30, 1927	4229	6431
No. 441—Sales of Ammonia and Ammonia Products to New Departure Manufacturing Company and Successors, 1933 through 1938	4230	6432
No. 442—Value of 1947 Shipments du Pont vs. Total United States Industries in which du Pont Participates	4231	6433
No. 443—Growth in Net Sales, du Pont and 27 Chemical Companies with Sales over $20,000,000 in 1948	4232	6434
No. 444—Paints and Varnishes, Dollar Value of Shipments—du Pont vs. Total Industry, 1939 vs. 1947	4233	6435
No. 445—Sales, by Department, to General Motors Corporation compared with Total Departmental Sales, 1938 through 1941; 1946 through 1948	4234	6436
No. 447—Sales of Brake Fluid (du Pont) Years 1936-1950, inclusive	4235	6437
No. 448—Petition, power of attorney and specification to the Commissioner of Patents by Don Kyle Proffitt and Joel George Sharron dated May 11, 1926	4236	6438
No. 449—Memorandum dated February 16, 1932, from President, Viscoloid Company, to Executive Committee, du Pont	4242	6444
No. 451—Sales of Products New to the Company since 1928 (Year 1950) (du Pont)	4243	6445
No. 452—Application of Proceeds of 7½% 10-Year Bonds, issued May 1, 1921, for Permanent Financing of Outstanding Obligations (du Pont)	4244	6446
No. 453—Undated Memorandum signed by Pierre S. du Pont	4245	6447
No. 454—Letter dated August 28, 1923, from Irenee du Pont to Finance Committee	4247	6449
No. 455—Letter dated October 27, 1923, from Alfred P. Sloan, Jr., to The Common Stockholders of General Motors Corporation	4249	6451
No. 456—"Investment in General Motors Corporation Common Stock" from Minutes of Meeting of the Board of Du Pont March 21, 1932	4257	6459
No. 457—Excerpt from Minutes of Meeting #513 of the Finance Committee (du Pont) May 15, 1933	4258	6460

duPont Exhibits:	Original	Print
No. 458—Excerpt from Minutes of Meeting #428 of the Finance Committee (du Pont) November 4, 1929	4260	6462
No. 459—Memorandum dated March 5, 1937, entitled "In re General Motors Securities Company"	4261	6463
No. 460—Memorandum dated April 26, 1918, from R. R. M. Carpenter to M. D. Fisher	4263	6465
No. 461—Letter dated October 6, 1922, from Dunham Body Company to E. I. du Pont de Nemours Co.	4264	6466
No. 462—Production of Open Cars 1915 through 1930 (GMC)	4266	6468
No. 463—Sales by du Pont of Plastics to Fisher Body Division of General Motors Corporation, 1927-1931, inclusive	4267	6469
No. 464—Positions held by Walter S. Carpenter, Jr., in du Pont Company 1909 to date	4268	6470
No. 465—Positions held by Crawford H. Greenewalt in du Pont Company 1922 to date	4269	6471
No. 556—Ammonia Department, Sales of Antifreeze (du Pont)	4270	6472
No. 557—Fabrics Industrial Master Trade Report dated January 13, 19[illegible]	4271	6473
No. 558—Excerpts from the Paint, Lacquer and Chemicals Department Monthly Report to the Executive Committee for November, 1926, dated December 23, 1926	4273	6475
No. 559—Excerpt from the 1937 Annual Competitive Report of the Fabrics and Finishes Department	4277	6479
No. 560—Excerpt from the 1940 Annual Competitive Report of the Fabrics and Finishes Department	4278	6480
No. 561—Excerpt from the 1941 Annual Competitive Report of the Fabrics and Finishes Department	4279	6481
No. 562—Excerpt from the 1947 Annual Competitive Report of the Fabrics and Finishes Department	4280	6482
No. 563—Excerpt from the 1950 Annual Market Survey of the Fabrics and Finishes Department	4281	6483
No. 564—Excerpt from the 1935 Annual Competitive Report of the Fabrics and Finishes Department	4282	6484
No. 565—Excerpts from Du Pont Products Index	4283	6485
No. 566—Sales of Ethyl Alcohols (including Ethyl Alcohol Type Antifreeze) to the General Motors Car Divisions, 1932 through 1941	4322	6524
No. 567—Sales of Ethyl Alcohols (including Ethyl Alcohol Type Antifreeze) 1932 through 1941	4323	6525
No. 568—General Motors Corporation purchases of finishes from du Pont and its competitors, 1946 and 1947	4324	6526

duPont Exhibits:	Original	Print
No. 569—General Motors Corporation purchases of fabrics (imitation leather and coated fabrics) from du Pont and its competitors, 1946 and 1947	4325	6527
No. 570—General Motors Corporation purchases of adhesives from du Pont and its competitors, 1946 and 1947	4326	6528
No. 571—General Motors Corporation purchases of Anodes from du Pont and its competitors, 1946 and 1947	4327	6529
No. 572—General Motors Corporation purchases of chemicals (solvents) from du Pont and its competitors, 1946 and 1947	4328	6530
No. 573—Government Exhibit 1388 corrected to include all products reported by General Motors Corporation to Grand Jury as purchased from competitors of du Pont Company	4329	6531

Defendant's Exhibit (DP) No. 1

5512

Pierre S. du Pont
Positions Held in E. I. du Pont de Nemours & Co.
and Predecessors
1890 to Date

1. E. I. du Pont de Nemours & Co. (Partnership)

Entered employ 9/1/90.

Assistant Superintendent of black powder operating department at Brandywine Mill 9/15/90-March, 1892

Superintendent of smokeless powder operating dept. at Carney's Point March, 1892 - March, 1899.

2. E. I. du Pont de Nemours & Co. (1899 Corporation)

None

3. E. I. du Pont de Nemours & Co. (1902 Corporation)

Treasurer	2/28/02 - 3/ 5/05.
Vice President	2/20/04 - 8/31/06.
Director	2/28/02 - 11/19/12.

4. E. I. du Pont de Nemours Powder Co. (1903 Corporation)

Treasurer	6/18/03 - 2/25/14.
Vice President	6/18/03 - 7/28/03.
	2/25/14 - 3/ 6/15.
Acting Pres.	9/ 1/14 - 3/ 6/15.*
President	3/ 6/15 - 12/31/19.
Director	5/20/03 - 5/22/26.
Exec. Comm. Member	6/18/03 - 9/19/14.
Finance Comm. Member	3/ 4/04 - 2/11/10.
	3/22/10 - 3/27/18.
Finance Comm. Chairman	3/ 6/15 - 3/27/18.

*Served as Acting President also at various times between January 7, 1909 and September 1, 1914 during the absence of T. Coleman du Pont.

5. E. I. du Pont de Nemours & Co. (1915 Corporation)

President	9/ 8/15 - 5/ 1/19.
Chairman of Board	5/ 1/19 - 5/20/40.
Finance Comm.	9/ 8/15 to Date.
Finance Comm. Chairman	9/ 8/15 - 3/15/26
Director	9/ 8/15 to Date.
Hon. Ch. of Board	4/15/46 to Date.

Defendant's Exhibit (DP) No. 3

5514

C
O
P
Y

December 7th, 1914

Mr. P. S. duPont,
Vice President.

2/16—Original handed to M-D-Fisher

Dear Sir:

As you know I have always felt those in responsible positions in our company should be encouraged to become importantly interested in the common stock and I have, as you know, always thought well of the common stock and put a higher figure on it than you have. I think it well worth 185 today and think it will go to 190 or 200 before the year 1915 is many months old.

This ownership of common stock by the leading men is of so much importance to the Company that as a member of the Finance Committee (the Company having cash away beyond its requirements), I would recommend the funds needed to carry stock for these men be advanced by the Treasury.

I am willing to sell for the purpose twenty thousand (20,000) shares at 160 per share ex-dividend payable in say 30 to 60 days.

To guide me I should like to have a suggestion from the Finance Committee or a Committee appointed by them as to how it should be distributed.

In as much as important men associated with us have asked me to sell them some stock I should like to have a

3237

prompt answer from the Finance Committee to enable me to reply.

If the important stockholders in Hercules Powder Co. think well of the plan, make a similar offer to the President of the Hercules Powder Co. except the number of shares will be much smaller say 4,000 and I think and hope you gentlemen feel the important stockholders in that Company should recommend to the directors of

—2—

that Company that the Hercules Co. advance the cash needed as the Company can spare it to enable the Directors (and those they suggest) to secure this stock.

The same with much reduced number of shares, 700 or 800 to the President of the Atlas Co.

I attached a copy of letter I was going to write to the President of the Hercules and of the Atlas Co.s but before sending same would appreciate any suggestions you gentlemen care to make.

Yours very truly,

(S) T. C. duPont

NOTE. Italics indicate handwriting.

December 14, 1914.

Mr. P. S. duPont,
Building.

Dear Sir:—

I have given a great deal of thought to my letter of Dec. 7th as to distribution of this stock and my judgment is that each member of the Executive Committee be allowed 1,500 shares. That the men whose salary is $500 a month and over will be allowed to subscribe for three times the amount of their salaries. This makes a total according to the memorandum you left with me, of 20,700 shares. I am willing to furnish the other 700 or the Company can do this as in your judgment seems advisable.

I suggest you make this announcement sometime prior to the 23rd of this month as I think it has some advantage.

As I am going away today and do not know how long I will be gone, I have left the matter in Mr. L. L. Dunham's hands. He can come to Wilmington and see you upon receipt of telegram from you.

Yours very truly,

(S) T. C. duPont.

Defendant's Exhibit (DP) No. 5

5517

December 14, 1914

Mr. P. S. duPont, V. P.,
Building.

Dear Sir:

After giving the question of purchasing a certain large block of duPont common further consideration, I believe that 160, the price you talked of, is too high. 150 would be purchasing it on a 6% basis, and 160 a 5%. This is too low a rate for the Company to invest its spare funds, and furthermore, if it were offered to any of our employes, it would not be sufficiently attractive at that price. I see no objection to the Company's purchasing this stock, but the question of price is one of grave importance, owing to the large investment.

I would suggest that no decision as to the actual price be given the owner until the Finance Committee has had ample time to think the matter over, and discuss it together.

Yours truly,

(S) Alfred I. duPont,
Vice President

AIduP-RB

Letterhead of
THE KAHLER
Rochester, Minn.

12/17/14

Dear Pierre

I talked to three Doctors today they all seemed to know what they were doing and they are going to take some x rays and do other stunts tomorrow they are most thorough in their methods and if any one can find out my trouble and correct it they ought to

These attacks have continued

—2—

almost daily since last Monday and I feel that this krick or what ever it is has taken a permanent "set" that can only be relieved by an operation or a fall like I had once before that kept pain away 6 weeks but no such good luck and I think after the whole gauntlet has been run they will decide to make an exploratory examination to see what the trouble is and I hope find it.

Else will write or telegraph

—3—

you as soon as there is anything definite to say. And when she can say I will be in a condition not to write or anything else for 3 or 4 days

The town is all Mayo's the Hotel their offices and Hospital the main town. I suppose there were 100 people waiting this morning and 100 more this afternoon, the

cs

hotel is full of convalescents and if a well person stayed here a week he might have the feeling that he was in a hos-

pital.

As I will be here likely 2 mos I told Lew Dunham of the stock sale, but made all necessary financial arrangements for the Equitable for Dec and until about middle of Jany. to be on the safe side.

Love to the family

Your aff cousin

Coleman

NOTE: The document is a handwritten letter. In the upper left hand corner are written the words ans'd 12/20/14. In the right hand corner appears P and the number 275.

Defendant's Exhibit (DP) No. 7

December 21, 1914

Mr. P. S. duPont, V. P.,
Building.

Dear Sir:

I find that I made an error in writing to you under date of December 14th, regarding the purchase of a certain large block of DuPont common stock, in stating that 150 would be purchasing it on a 6% basis. I presume the discrepancy was noted by you, as it should have been 133 and not 150.

I doubt whether the investment of the Company's surplus earnings by the Finance Committee on a basis even as high as 6% could be justified. In other words, if the Company is unable to invest its surplus earnings at a rate better than the stockholders might, themselves, they might contend that these earnings should be distributed in the form of a dividend.

I presume that this matter will be discussed at our next Finance Meeting on December 30th.

Yours truly,

(S) Alfred I. duPont
Vice President

AIduP—RB (Here follow handwritten memo of PS)
If we take earnings at 12% = 7.5% basis at 160
" " 18 = 11.25% "

Defendants' Exhibit No. 22

Excerpt of

COPY OF MINUTES OF FINANCE COMMITTEE MEETING #56

E. I. DU PONT DE NEMOURS POWDER COMPANY

HELD IN WILMINGTON, DELAWARE ON DECEMBER 23, 1914

• • • • •

E. I. DU PONT DE NEMOURS POWDER COMPANY
FINANCE COMMITTEE.

Meeting #56, (Special Meeting) held at the office of the Company, Wilmington, Delaware, 10:15 a.m., December 23, 1914.

Present: P. S. duPont, in the Chair
Alfred I. du Pont,
William duPont.

Absent: T. C. duPont.

• • • • •

PURCHASE OF COMMON STOCK OWNED BY MR. T. C. DUPONT.

Mr. P. S. duPont presented a letter from Mr.T.C.du-Pont, offering to sell 20,700 shares of Common Stock of this Company at $160. per share. After discussion, it was moved and carried, (Mr. P. S. duPont voting in the negative), that Mr. P. S. duPont be instructed to advise Mr. L.L. Dunham attorney for Mr. T.C.duPont, that

we do not feel justified in paying more than $125.00 per share for this stock.

Upon motion the meeting was adjourned.

/s/ Alfred I.duPont

/s/ P. S. duPont

Approved as
to legality:

/s/J. P. Laffey
Time—1 hr.30 min.
23.

I hereby certify that the foregoing is a true copy of the minutes of Finance Committee Meeting #56, E. I. du Pont de Nemours Powder Company, held in Wilmington, Delaware on December 23, 1914.

/s/ F G Hess
Sec'y, Finance Committee
E. I. du Pont de Nemours and Company
Successor to
E. I. du Pont de Nemours Powder Company

[SEAL]

April 30, 1951.

2
E

T. C. duPont, President,
Rochester,
Minnesota.

Dear Coleman:

I have been intending to write you about the reception of your proposition by the Finance Committee. Unfortunately, Alfred, who had approved the plan before you went away, got somewhat cross-wise in the meeting and I think it wise to let the matter rest for the moment; preferably until I can see you, before taking any other step. I am sorry and provoked that the proposition did not go through, for I feel that your offer was a generous one and should have had more considerate treatment; but, like many other things, the final result cannot be obtained quickly.

The Hercules plan was accepted in very good spirit. It is held up temporarily because their attorneys have told them their company cannot loan the money to the Directors. Technically, this may be correct; but I do not think they should hesitate to put the thing through, nor do I think they will. The Atlas people, acting under the same laws (of Delaware) have accepted the proposition and I understand from Lou Dunham today have taken over the stock. Undoubtedly the Hercules will come to the same conclusion.

Colonel Buckner still continues busy. The Nobel and Russian contracts are to be closed today or tomorrow and we have other similar items in view. The actual sales amount to about Thirty-five Million. Construction work is reported well along.

5524

On New Year's Day I was surprised to find Moxham ill in bed. By this time you have probably heard that he was threatened with pneumonia, but I believe all danger has now passed. He seemed quite himself and willing to talk. I understand that his company is determined to go ahead on smokeless powder and guncotton. It seems a great mistake, but not for us to dictate.

Lou Dunham gives me the good news that you have been up from bed already. It seems almost too good to be true and shows your reserve strength. Altogether your operation, severe as it was, seems to have promise of very good results. All here are interested in hearing from you. I have daily inquiries.

Your affectionate cousin,

(S) PIERRE S. DUPONT,
VICE PRESIDENT

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3247

E

January 14, 1915

Mr. T. C. duPont,
Rochester,
Minnesota.

My dear Coleman:

It was very good to hear from you again and at such length, showing improvement you are feeling. Dale Bumstead called on me yesterday and reported his visit to you and the prescription in the shape of a "Big Stick" that he left with you. Liberal doses of this may be necessary if you keep on improving, for I am sure that you will be wanting to get back to work at the earliest possible date. I hope, however, that you will be induced to take all precautions so that recovery will be complete this time.

Things are still moving rapidly with the company. At last all the contracts in negotiation when you left here are signed and the first payments made,—an aggregate of 35,000,000 pounds of powder, 3 100 000 pounds of guncotton and 5,116,000 pounds of trinitrotoluol. Meantime other important negotiations are in progress. I think I wrote you that Nobels want 4,300,000 pounds and Bethlehem Steel 2,600,000 pounds of powder and Nobels 3,500,000 pounds of guncotton. In addition to this we have the large Russian negotiation part payable in bonds, but in looking over your letter I find I have not clearly explained the proposition. You are correct in understanding there are two alternatives; one of thirty million pounds, another of fifty. In case the price of one dollar per pound payable one half in cash and half in bonds (the latter valued between

80 and 85): At the end of the contract and upon final payment, a two and one-half percent discount, in cash, is to be allowed on the one dollar price. However, our offer to purchase $5,000,000. Russian bonds on the larger proposition would be the equivalent to the taking of thirty million bonds and twenty million cash. I hope this is now made clear to you. You understand of course that this order would be filled out of existing plants, so that no depreciation would have to be charged off. The cash would be very ample for taking care of manufacture. If, however, we should accept all bonds, we would have to put up on the larger proposition, say, twelve and a half million, which I think we could easily arrange through sale of bonds, or our other resources. With such large business as this, such an item is quite safe. Apparently the proposition has been well received by the Russian representative in this country. We hope to hear from Petrograd this week. Of course anything final can hardly be expected, but we should at least have an indication of their interest Buckner has made a similar proposition to the French representative and cables have been sent to France on this subject. It seems possible that two large orders could be secured in this way, thus establishing our 1916 business. I believe in my last letter I wrote you these orders would necessitate our increasing, this year, our guncotton capacity from the figure I gave you (70,000,000 lbs.) to about 100,000,000 lbs. Powder capacity must be raised from sixty to ninety million pounds. This means we will have to increase our appropriation to $8,300,000. A total of $5,700,000, is the figure already authorized.

Today the Finance Committee authorized the purchase of $3,000,000. short terms notes and bonds, in order to make some return on our large cash balances. I do not think it the right time to invest any funds in a permanent way, particularly if we are to take securities in payment for future powder orders.

Our raw material arrangements seem in satisfactory shape. Very large quantities of cotton have been covered at a low price, as well as sufficient nitrate of soda; the latter, however, is in storage in Chile. We are now working on a plan to have in this country sufficient nitrate to produce all the powder already sold, as a matter of insurance. Diphenylamine, over which we had some concern, is now being manufactured by us; the plant having been started, but it has not operated sufficiently long to establish what we can do. The General Chemical Company have also succeeded with their factory, so I think it unlikely that we shall fall short of a supply. Sulphuric acid is to be supplied largely by the General Chemical Company, but in addition we are to erect a comparatively small plant at Hopewell, Virginia. Nitric acid we will of course supply ourselves in the usual way. I do not see how we can "fall down" in any way as far as raw materials for existing contracts are concerned.

It is reported that Francis I. is negotiating with Moxham in regard to guncotton and smokeless powder manufacture. I understand that Peyton announced he was going into the smokeless powder business on his own account if the Aetna Explosives Company did not join him; hence their determination to go ahead, in which they are, I believe, much in error. Francis will have to decide soon whether he is

to go with them or not. He should not be working on both sides of the question.

The demand for offices is not sufficient to necessitate any change in the rooms occupied by you. I think that everything is straightened out at present, though the building is pretty well filled.

At to the stock offer: In Willie's absence I shall do nothing. He will be here in a week and I will try to ge some action. If this is not possible it will mean that the question of value of the stock was not uppermost in their minds. If not finally accepted would you approve making an offer direct to the men? I should think that a financing suitable to you might be arranged. I am quite sure that they would like to take the stock, but do not feel in position to say anything while you are negotiating with the company. No one but the Executive Committee and Directors know of the offer as far as I know. The Board of course knew it through the minutes of the Finance Committee.

Getting back to the large orders we are negotiating: I will let you know as soon as anything develops, as they are of great importance. Colonel Buckner, who has been in New York the last few days, returns tomorrow and there may ppossibly be something to report.

Your affectionate cousin,

NOTE. "P. S. du Pont" is stamped across each page of letter. "P-275" is written in the upper right hand corner of page 1.

DEFENDANTS' TRIAL EX. No. DP11

Jany 15, 15.

Dear Pierre:

Thinking over the stock offer matter, I still think it an advantage to the company, but in view of Alfred's position I think it best to withdraw it if the Finance Committee has not accepted my proposition,; when I get home we can talk it over and if best I can renew it, but it seems very unbusiness like to leave it in its present condition.

Of course if you have talked to Willie or are in any way committed that settles it I will carry out any statement you have made, on the other hand if you have not made any my judgment is to withdraw it, again if you have any good reason for not doing so let me know your position.

Glad to say I am gaining a little daily about one day in four or five I get an off day and feel "Bum" but four out of five or six I feel that I am gaining.

Love to all the family in which Else joines me, I am

Your aff. cousin,

(S). Coleman.

Defendant's Exhibit (DP) No. 12

5530

Telegram — Postal

6—Wg C15
Rochester, Minn. Jan. 17th, 1915

P. S. duPont,

Wilm.

Letter of fourteen received if you are not committed withdraw my offer will write.

Coleman duPont
12:05 pm

Rochester, Minnesota,
Jan. 19, 1915

Mr. P. S. du Pont,
Wilmington, Del.

Dear Pierre:

Upon receipt of your letter of the 14th, I telegraphed you "Letter fourteenth received. If you are not committed withdraw my offer. Will write" which is now confirmed.

Inasmuch as Christmas and January first are past I don't think two or three more months will make any difference, and in my mind it would be such a good thing for the young men to have a stock interest that I am sure we can arrange for them to take it without it being purchased by the Company, through one of the New York banks, probably the Bankers Trust Company, but I believe if this is left until I get home we can work it out better.

I note by the Wilmington papers of a few days ago that common stock was selling at 155 to 160. With the outlook and the orders ahead I can't understand why the prediction in my letter to you that the stock would be 180 even 200 during the first few months of 1915, is not being fulfilled.

I note that the total orders are something over $40,000,000 with $10,000,000 more in prospect, not counting the two partially payable in bonds. These should certainly make the dividend 50 percent on 1915 and 1916 and 1917 which should make the stock easily worth 200. At any rate, I feel sure we can work out some plan that will be beneficial to the important men in the Company and, therefore, beneficial to the Company, just as soon as I get back home.

Speaking from memory, you or someone told me that Alfred considered the common stock worth 300; therefore the price was not the reason for his changing his mind after I left Delaware.

Your letters are all fully appreciated, but, of course, there is nothing going on at this end of the line .... (torn) .... give me the opportunity of writing much in reply.

Your affectionate cousin,

(S) Coleman du Pont.

Defendant's Exhibit (DP) No. 14

5533

Mr. T. Coleman duPont,
Rochester
Minnesota.

My dear Coleman:

On my return from New York, where I have been for a couple of days, I find your letter and am glad to hear from you again. I am sure that some plan of advantage can be worked out when we next meet. A couple of days ago Alfred suggested to me that the Finance Committee take up the question of selling Treasury-stock to our important men. What would you think of such a plan? I do not know what he has in mind, but suppose something similar to your offer, excepting at a lower price. I do not think it need interfere with your arrangement if you desire to put it through also.

Since my last letter, the Nobel Company has closed for 6,500,000 more pounds of powder and guncotton on account of the British Government. This order comprised three different lots which had been negotiated for the Belgians and Vickers' Sons originally, but the British Government stepped in and took them, so that Mr. Purvis, the Nobel representative here in the States, has asked for deliveries on the duplicate orders for the original buyers. I feel confident that this duplicate will also be closed. We have heard from the Russians that they cannot consider our offer further; I judge on account

of the difficulty to issue bonds. However, Colonel Buckner has taken up the question of supplying powder for the British Government with J. P. Morgan & Company who have been appointed financial agents for the purchase of supplies. He has offered them substantially the same amounts as offered Russia, namely:

7 000 000 lbs for delivery this year

3 000 000 " per month over next year

These offerings together with what we have closed take up practically all that we have for delivery between now and March, 1916; though we have increased our capacity, as I wrote you, 103 000 000 lbs. guncotton (94 000 000 lbs. powder) starting with September and October deliveries.

My New York visit was to meet Mr. Kraftmeier, who, with his wife and daughter, arrived on the LUSITANIA Saturday. He had cabled he wished to meet Irenee and me immediately on his arrival. I supposed that his mission was to place additional orders so we took Colonel Buckner along and were much surprised to find that Mr. Kraftmeier made no mention of orders. Finally, after he succeeded in drawing me aside, he told me that they had had a report that Kuhn, Loeb & Company of New York (who are pro-German firm) had gained control of our company through the embarrassment of one of our large stockholders and that they on that account had fears concerning the orders placed with us. I, of course, assured him that nothing of the kind had happened, or would happen; that all orders would be filled according to contract without any

shadow of a doubt. He semed somewhat relieved to hear this and said this was one of the important things that brought him over. From his conversation I judge that it was THE important thing, for no other part of our discussion seemed to be of moment. I imagine that the orders placed with our company are of serious concern to the Allies and a rumor such as Kraftmeier outlined might well be worth a visit of investigation to the United States.

Kraftmeier inquired for you and was glad to learn of your improved condition. He expects to be here about a month, though I understand he will go to Palm Beach for part of his stay.

I am recommending to the Finance Committee the equalization of Executive Committee salaries. Do you not think this a good plan?

Owing to the congestion of our Brandywine Machine Shop, we have been obliged to lease the shop of J. Morton Poole, in Wilmington. Here we will do work on special pieces of apparatus such as powder presses. We do not contract outside, owing to the necessity of keeping secret our designs. Pusey & Jones Company have undertaken to manufacture guncotton wringers for the Aetna Explosives Company on designs which are substantially ours, though we have no legal claim. This shows the importance of keeping our own designs to ourselves.

Your predictions as to the common stock have been nearly realized. John Raskob tells me this morning that the price *has reached $188/190.*

It is difficult to judge of the effect of earnings by the extraordinary business. In the neighborhood of 100%

seems a fair guess. That amount reinvested, say, on a 10% basis would mean a permanent increase of 10% on the earnings. Eventually this can be accomplished, so I think it would be fairer to count on 5 or 6% for the first couple of years. My judgment is that we will be warranted in resuming a 12% dividend basis for this year. I have another reason for advocating this, entirely,—That I am quite thoroughly persuaded it will be a mistake to publish our quarterly statements this year. Perhaps the connection of the two ideas is not obvious! As to the discontinuance of the statements: I think it would not benefit the company and probably do material harm to publish the effect of the extraordinary business any sooner than is necessary, which I judge will be the end of the year 1915. We could hardly be criticised for witholding information, excepting that stockholders might accuse us in the future of having withheld the report of profits in order to buy in the stock. To safeguard ourselves against this accusation and to be quite fair with the stockholders, I propose to increase the dividend, which, together with rumors of large orders, should certainly place any stockholder on guard against selling. Increase of dividend alone should be a warning that withholding of statements is due to prosperity and not reverses. Those who notice the absence of a quarterly statement and write to us about it can receive a reply that will satis-

fy them that statements are not withheld because of their poor showing. I should like to have your thought on this question. I have not talked it over to any extent,—with John and Irenee only, I think. I confess that they do not respond very readily to he idea, but we have plenty of time to think it over, as the first quarterly statement is not published until May. The annual statement for 1914, which

reflects little of the extraordinary business will be published in due season.

You probably do not realize how much this extraordinary military business has diverted attention from the routine of the company's business. We must be careful that our point of view is not entirely warped out of line by this temporary situation. It will take very careful thought and manouvering to return to former conditions. The Engineering Department has expanded beyond our wildest dream. Those in the Smokeless Operating Department have seized men from the other departments in order to quickly meet demands. The other departments have responded splendidly and have done their utmost to adjust themselves to the new conditions. As far as I can see there is but one purpose throughout the entire force; that is to "make good" on these large contracts and to do it quickly. It is a situation of which we may well be proud and satisfied. There is of course a danger of over-loading, but apparently no danger of anybody "falling down" through lack of willingness to work and co-operate.

The following are the figures on total sales, to date:

—6—

	Quantity Pounds
Cannon	33 291 000
Rifle	7 952 200
Guncotton	8 772 000
Triton	5 984 375
TOTAL	55 999 575

In addition to the above we have offers for 14 027 500 lbs.

Your affectionate cousin,

18

NOTE. "P. S. du Pont" is stamped across each page. Italics indicate handwriting.

Defendant's Exhibit (DP) No. 15

5538

Copy

January 28, 1915.

Mr. T. C. duPont,
Rochester,
Minnesota.

My dear Coleman:

In talking over the Kraftmeier rumor with the Finance Committee, it was suggested that we four large stockholders place our stock together for a period of time covering this extraordinary war condition with an agreement that the certificates would not be sold or used as collateral unless by common consent. I do not think it was intended to mean that any individual would be forbidden to use his certificates without consent of the others. In my opinion it would be better to agree that one could not use his certificates unless the others knew about it. Alfred proposed that any loans that might be now outstanding with DuPont stock as collateral could be taken up by the company and thus enable each individual to carry out the plan. The company could not suffer by this as they cannot put out within a reasonable time their large cash balance at more than ordinary interest. Surely loans with company stock as collateral would be more than safe. After suggesting this plan Alfred stated he had no loans on his stock, in a way that suggested a proposal for a show-down. Willie then stated that he had no loans and I said that I had none. As far as I know neither was acquainted with the others position up to that moment. They then asked me to communicate with you to see if you would approve of the plan as outlined. Personally, I think

it a good idea, as our ability to state positively that control of the

stock was absolutely safe would put our foreign orders in much better position. Our business with the side of the Allies is so large now it may mean to them the turning point of the war. It is, therefore, of the utmost importance that they know our situation. If you approve the plan and are in position to have Lou Dunham put it through, it would be a very good thing to tell Mr. Kraftmeier that we had determined to do this in order to assure our customers of the true position. In view of the importance of the question, I have talked with Lou in order that he might be in position to communicate with you intelligently. I have, however, stipulated that he shall not acquaint me with your situation until the whole question has been thoroughly ventilated. I know that he would not tell me anything that you desired to keep to yourself, but even if you are willing I think it better for me not to know your situation in talking with the Finance Committee. Either you or Lou should tell them whatever you wish them to know.

The more I think of Kraftmeier's question, the more I appreciate the importance of our financial position with the Allied nations. We have gone so far with the latter in the way of orders, I am beginning to feel it dangerous to place an order with the other side; for they would then have access to our factories in a way that might mean great danger to us. Of course there seems little likelihood of being approached with German orders.

Please let me know what you think of this question. If it will cause you any trouble, or worry, just turn it down until you are ready to discuss it with us.

Your affectionate cousin,

2

Defendant's Exhibit (DP) No. 16

5540

Copy

Richester, Minn,
Jany 31, 1915

Dear Pierre:

I am in receipt of your letter of Jany 28th in regard to dispositing stock and am sending the answer through Lew in same mail, if it is not inconsistent with what he has done since I left and the statements I make from memory correspond with the record he will take or mail it to you. I have been out of touch with the details left in Lew's hands so long that this is only fair to him & me, neither do I cafe (sic) to give you anecient history.

Your aff. cousin,

(S) Coleman du Pont

[3263]

Defendant's Exhibit (DP) No. 17

Rochester, Minnesota
Feb. 13, 1915

Mr. P. S. duPont,
Wilmington, Del.

Dear Pierre:

I got a little too gay last week and have been on the "blink" for five or six days, but am getting along alright now.

The more I have thought of the stock question the more I believe with what little information I have that the common stock should reach 250 and may reach 300. If this is true, the men who are now at the helm and actually doing things should make the profit as between today's figures and that figure; it will be by far the best thing that can happen to the Company. So clear I am that this is the right time to get them interested that I am willing, figuring as surely as I can that that this stock will go much higher, to let go for the benefit of the men who are working, which, of course, means the benefit of the Company, 20,000, 30,000, or even 40,000 shares at today's market, which I assume is about 200. As to the details of working this out I am entirely willing to leave this to you and Lew.

If much time is desired the price should be higher. If the arrangement for cash payment is made through banks there should be no increased price. In order to get time when we purchased the Company originally what we gave to be allowed time amounted to, I believe, over one hundred percent increased price, this because the element of chance must necessarily come in.

Of course, I am only using my best judgment in this matter, but I am willing and strongly urge that the heads of departments and younger members of the family become most interest in the common stock.

I read with great interest your letter of February 5th in regard to the outlook and also in regard to Mr. Kraftmeier's position. What I am most afraid of at this time is that the "Powers that Be" at Washington will do some fool thing that will draw the United States into controversy before we know it, and in this case we would have to supply our own government in addition to the other orders.

I think the statement you propose making to the Finance Committee is exactly the right one and has my entire approval.

Your aff cousin,

(S) Coleman duPont

Defendant's Exhibit (DP) No. 18

5543

POSTAL TELEGRAPH — COMMERCIAL CABLES

TELEGRAM

Wilmington, Del., February 17, 1915

To Mr. Coleman DuPont
Hotel Kahler
Rochester, Minn.

Wire me if you would be willing to sell forty thousand shares and pool balance for voting purpose. Another proposition would you be willing to sell entire holdings. Both cash.

L. L. DUNHAM

Chg. C. duPont.

Defendant's Exhibit (DP) No. 19

5544

February 20th, 1915

Mr. Coleman duPont,
Blackstone Hotel,
Chicago, Illinois.

My dear Coleman:

I beg to confirm my telegrams of today and your phone conversation:—

"Have arranged final conference with bankers Tuesday and Wednesday. Propose purchasing your sixty three thousand two hundred fourteen common at two hundred and thirteen thousand nine hundred eighty nine preferred at eighty—paying eight million cash and five million seven hundred sixty two thousand in seven year five percent notes of company to be formed. Collateral on notes to be thirty six thousand shares common stock. We to have privilege of paying notes before maturity. Also prepared to close immediately. Do you accept this proposition? Has Dunham full authority and necessary power to act for you? Important this be kept confidential for present. PIERRE."

TC has got
63314 com
14599 pfd
L L Dunham
2, 21, '15

"We accept your modifications to our telegram, six percent on deferred payments and eighty-five for preferred stock. This makes deferred payment five million eight hundred thirty-one thousand eight hundred sixty-five dollars, carrying the six percent. Please write letter confirming. Details will be settled with banks on Tuesday. PIERRE."

3267

I understand I have purchased from you sixty-three thousand two hundred fourteen, (63,214) shares of the common stock of E. I. duPont deNemours Powder Company at Two Hundred (200) Dollars per share and thirteen thousand nine hundred eighty-nine (13,989(shares of the preferred stock of E. I. duPont deNemours Powder Company at eighty-five (85) dollars per share. Also, you are to be paid eight million (8,000,000) in cash and five million eight hundred thirty-one thousand eighty hundred sixty-five (5,831,865) dollars in

six percent (6%) seven (7) year notes of a company to be formed to complete this transaction; the collateral on the notes being thirty-six thousand four hundred fifty (36,450) shares of the common stock of E. I. duPont deNemours Powder Company. The company is to have the privilege of paying these notes before maturity. Until we have all the details arranged, I suggest that the transaction be kept confidential. I will let you know as soon as it is announced, which of course must be fairly soon. I have arranged for the loan in New York, but some details will have to be finished on Tuesday, February twenty-third (Monday being a bank holiday). I will arrange immediately with Lou Dunham for the transfers.

Your affectionate cousin,

Defendant's Exhibit (DP) No. 20

WESTERN UNION TELEGRAM

Feb. 22 1915
2-22 Copy LLD

T. C. duPont,
Blackstone Hotel,
Chicago, Ill.

Please wire acceptance of proposition my letter twentieth in order that we may have definite proposition for banks tomorrow.

Pierre

Chg: P. S. duPont, Personal

Defendant's Exhibit (DP) No. 21 5547

WESTERN UNION TELEGRAM

13-Wi C 23 2-22 copy LLD

Chicago Ills Feb. 22 nd 15.

P S du-Pont,

Wilmn.

PROPOSITION ACCEPTED FOR ENTIRE HOLDINGS DON'T KNOW EXACT NUMBER SHARE ASSUME COLLATERAL ON DEFERRED PAYMENTS TO BE MAINTAINED RELATIVELY SAME AS AT START.

Coleman

11:57-A-M.

3279

Defendant's Exhibit (DP) No. 22

Letters up to & including that of T C 2, 13, '15 speak for themselves & give all of the transactions re stock sale up to the latter date. Letter of 2, 13, '15 was received by me 2, 16, '15. On 2, 17, '15 had a talk with L L Dunham in which I asked him to find out if T C would pool his remaining stock. Dunham thought he would or perhaps sell all. This was first intimation to me that sale of all was possible or probable. In accordance with this statement L. L.D's telegram 2, 17, '15 was sent out.

After talking with L L D, I made some rough figures & on the afternoon of 2, 17, '15 told J J R of the

—2—

proposition. The next day Thursday 18th I dP L dP JJR RRMC & I had a conference during which L L D came back to say that he had heard from TC who was willing to sell all of his stock but would not go into a voting pool unless he knew of the terms. This decided us to entertain a negotiation for all of TC's holdings & it was decided that JJR would visit Morgan & Co. in N Y the next day to try for a loan of $13,500,000 or thereabouts in order to make purchase.

—3—

J. J. R. returned from NY 2:30 train Friday 19th & met me in Bellevue Hotel Phila. He had found Morgan & Co. (Mr. Porter) in a favorable attitude & Porter immediately started out to sound the banks.

On Sat 20th we met in Wil & on calling Mr. Porter in NY found that he had practically secured 10,800,000 out of the necessary 13,500,000-14,000,000. At this time Mr.

Porter had suggested a 6% rate with 1% commission to banks & 2% to Morgan & Co. 3 yr loan.

It was determined to try for a part deferred payment to TC

—4—

& accordingly telegram of 2, 20, '15 was sent.

T C called LLD on 'phone & said he would rather hold his pfd than sell at 80 but would sell at 85 otherwise proposition satisfactory also telegraphed me.

This was accepted in 2nd telegram of 2, 20, '15 & confirmed by letter of same date.

NOTE. Italics indicate handwriting.

Defendant's Exhibit (DP) No. 23

DISTRIBUTION OF DU PONT SECURITIES COMPANY STOCK

		Total shares in original distribution	Shares to be supplied to principal employes	Balance of shares remaining	Allotment of shares to principal employes	Final share holdings
Pierre S. du Pont	50%	37,500	5,875	31,625		31,625
Lammot du Pont	16%	12,000	1,880	10,120	1,250	11,370
Irenee du Pont	16%	12,000	1,880	10,120	1,250	11,370
R. R. M. Carpenter	6%	4,500	705	3,795	1,250	5,045
John J. Raskob	4%	3,000	470	2,530	1,250	3,780
A. Felix du Pont	8%	6,000	940	5,060		5,060
Wm. Coyne					1,250	1,250
H. G. Haskell					1,250	1,250
H. F. Brown					1,250	1,250
F. O. Tallman					1,250	1,250
W. C. Ramsay					1,250	1,250
J. P. Laffey					500	500
	100%	75,000	11,750	63,250	11,750	75,000

CHRISTIANA SECURITIES COMPANY

METHOD OF FINANCING PURCHASE OF E. I. du PONT de NEMOURS POWDER CO. STOCK FROM T. COLEMAN du PONT, MARCH 2, 1915

Stock Purchased from T. Coleman du Pont		Payments to T. Coleman du Pont	
63,314 shares Powder Co. common at $200	$12,662,800	Cash (borrowed from banks on 6% 1-1/2 year notes)	$ 8,000,000
14,599 shares Powder Co. preferred at $85	1,240,915	6% 7-year notes to T. Coleman	5,903,715
	$13,903,715	Total payments	$13,903,715

Du Pont Powder Co. Stock Required for Use as Collateral to Secure Borrowings

	Shares Common	Shares Preferred
Deposited as collateral to secure 6% 7-year notes to T. Coleman du Pont	36,900	0
Required as collateral to secure 6% 1-1/2-year notes to banks	54,591	14,599
Total collateral requirements	91,491	14,599
Stock purchased from T. Coleman du Pont	63,314	14,599
Additional stock required for use as collateral	28,177	0

Acquisition by Christiana Securities Co. of the 28,177 Shares of du Pont Powder Co. Common Stock Required for Use as Collateral

Du Pont Powder Co. Common Stock Acquired		Source	Christiana Securities Co. Stock Issued in Payment	
Shares	% of Total		Shares	% of Total
14,089	50%	Pierre S. du Pont	37,500	50%
4,508	16%	Irenee du Pont	12,000	16%
4,508	16%	Lammot du Pont	12,000	16%
2,254	8%	A. Felix du Pont	6,000	8%
1,691	6%	R.R.M. Carpenter	4,500	6%
1,127	4%	John J. Raskob	3,000	4%
28,177	100%		75,000	100%

Employees of E. I. du Pont de Nemours Powder Company to Whom Christiana Securities Company (Du Pont Securities Company) Assigned 11,750 Shares of its Capital Stock, March 19, 1915

Name of Employee	Positions Held in E. I. du Pont de Nemours Powder Company
Irenee du Pont	Director Chairman of Executive Committee Member of Finance Committee Vice President
H. Fletcher Brown	Director Member of Executive Committee in charge of Smokeless Powder Dept.
R.R.M. Carpenter	Director Member of Executive Committee in charge of Development Dept.
William Coyne	Director Member of Executive Committee in charge of Sales Dept.
Lammot du Pont	Director Member of Executive Committee in charge of Black Powder Dept.
Harry G. Haskell	Director Member of Executive Committee in charge of High Explosives Dept.
John J. Raskob	Director Member of Executive Committee in charge of Accounting and Auditing Depts. Treasurer
John P. Laffey	General Counsel
William G. Ramsay	Chief Engineer
Frank G. Tallman	Director of Purchasing Dept.

THIS AGREEMENT, Made this *19th* day of March, A. D., nineteen hundred and fifteen, by and between duPont Securities Company, a corporation existing under the laws of the State of Delaware, party of the first part, William Coyne, Harry G. Haskell, and Harry F. Brown, ..., as Trustees, parties of the second part, and Irenee duPont, Lammot duPont, R. R. M. Carpenter, William Coyne, Harry G. Haskell, Harry F. Brown, John J. Raskob, William G. Ramsay, Frank G. Tallman and John P. Laffey, parties of the third part, WITNESSETH:—

WHEREAS, the party of the first part hath this day assigned unto the parties of the third part eleven thousand seven hundred and fifty shares of the capital stock of du Pont Securities Company, a corporation existing under the laws of the State of Delaware, in the amounts following, to-wit:

Irenee duPont,	1250 shares,
Lammot duPont,	1250 shares,
R. R. M. Carpenter,	1250 shares,
William Coyne,	1250 shares,
Harry G. Haskell,	1250 shares,
Harry F. Brown,	1250 shares,
John J. Raskob,	1250 shares,
William G. Ramsay,	1250 shares,
Frank G. Tallman,	1250 shares,
John P. Laffey,	500 shares.

AND WHEREAS, the certificates representing the said eleven thousand seven hundred and fifty shares of the said stock have been assigned in blank by the respective

holders thereof and delivered to the parties of the second part;

AND WHEREAS, the parties of the third part hereto are now in the employ of E. I. duPont deNemours Powder Company, a corporation existing under the laws of the State of New Jersey;

NOW, THEREFORE, in consideration of the premises, as well as for and in consideration of the sum of One Dollar by each of the parties hereto to the other in hand paid, at and before the sealing and delivery hereof, the receipt whereof is hereby acknowledged, it is agreed by and between the parties hereto as follows, to-wit:

That the said stock was issued by the party of the first part unto the parties of the third part and has been assigned by them and is now held by the parties of the second part for the purposes hereinafter mentioned.

(a) Should the parties of the third part respectively continue in the employ of the said E. I. duPont deNemours Powder Company for the period of one year from the date hereof, or should any of the parties of the third part die within the said period of one year while still in the employ of the said Company, the said stock shall become the absolute property of the parties of the third part respectively, or their legal representatives, and the certificates therefor shall be delivered by the parties of the second part unto the parties of the third part respectively, or their legal representatives, at the expiration of three years from the date hereof, and during the said period of three years, the said parties of the second part shall continue to hold the said cer-

tificates and shall not deliver the same to the parties of the third part, or any of them, or to their legal representatives, for any purpose whatsoever.

(b) Should any of the parties of the third part cease to be employed by the said E. I. duPont deNemours Powder Company for any reason whatever (death excepted) within one year from the date hereof, the said stock standing in the name or names of the person so

—3—

leaving the said employment shall be returned unto the party of the first part and become its sole and absolute property.

(c) The parties of the third part respectively so long as the said stock shall continue to stand in their names on the books of the said Company shall be entitled to vote the same at any meeting of the stockholders and for all purposes arising thereat, and shall likewise be entitled to receive any dividends which may be declared and paid on such stock, but none of the parties of the third part shall be entitled to withdraw the said certificates from the care and custody of the parties of the second part at any time within the period of three years from the date hereof, nor shall any of the parties of the third part sell, pledge, hypothecate, or in any manner dispose of the said stock or any part thereof until the expiration of the said period of three years. The said stock having been assigned unto the parties of the third part by the party of the first part to be held by them and each of them only in accordance with the provisions of this agreement.

IN WITNESS WHEREOF, the party of the first part hath caused the hand of P. S. duPont, its President, and its corporate seal to be hereunto affixed, and the parties of the

second and third parts respectively have hereunto set their hands and seals the day and year first aforesaid.

Signed, Sealed and Delivered in the presence of,

duPont Securities Company,
By /s/ PIERRE S. DU PONT
President.

Attest:
/s/ J J RASKOB
Secretary.

/s/ WM. COYNE TRUSTEE (SEAL)
/s/ HARRY F. BROWN Trustee (SEAL)
/s/ HARRY G. HASKELL Trustee

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Signed, Sealed and Delivered in the presence of,

A. Rae du Bell as to all ten signatures
M. N. Thorp as to all ten signatures

/s/ HARRY G. HASKELL (SEAL)
/s/ WILLIAM G. RAMSAY (SEAL)
/s/ F. G. TALLMAN (SEAL)
/s/ J J RASKOB (SEAL)
/s/ R R M CARPENTER (SEAL)
/s/ IRÉNÉE DU PONT (SEAL)
/s/ LAMMOT DU PONT (SEAL)
/s/ WM COYNE (SEAL)
/s/ HARRY F. BROWN (SEAL)
/s/ JOHN P LAFFEY (SEAL)

NOTE. Italics indicate written entries.

Defendant's Exhibit (DP) No. 27 5557

This letter sent to:
Charles Copeland, Esq.
W. W. Laird,
H. Rodney Sharp,
H. F. duPont, Esq.,
Wilmington, Delaware.

Alexis I. duPont
Eugene E. du Pont
Eugene du Pont,
Francis I. du Pont
Ernest du Pont
E. Paul du Pont

April 16, 1915

A.M.L.du Pont
Philip F.du Pont

Dear Sir:

The purchase of Mr. T. C. du Pont's holdings in E. I. du Pont de Nemours Powder Company, made by a syndicate of which I am a member resulted in the formation of the du Pont Securities Company, whose notes to the amount of $14,400,000 and stock amounting to $7,500,000 we issued in payment for the above mentioned stock as well as shares of common stock of E. I. du Pont de Nemours Powder Company owned by the syndicate. The members of the latter now hold stock in the Du Pont Securities Company in the proportion of 500 shares of the latter for each 222.75 shares of the common stock of E. I. du Pont de Nemours Powder Company acquired from the syndicate members by the Du Pont Securities Company.

Now that this whole transactions is definitely closed, I offer you opportunity to become a stockholder of Du Pont Securities Company on the basis above outlined; that is, if you will transfer to me 223 shares of common stock of E. I. du Pont de Nemours Powder Company, I will transfer to you 500 shares of Du Pont Securities Company and $50 in cash, representing the quarter share of E. I. duPont de Nemours Powder Company common at theoriginal price of $200 per share.

The assets and liabilities of Du Pont Securities Company are set forth on the attached statement, which will

J-7

be a guide to you in reaching a decision as to this investment. As a matter of convenience I have listed the values at the price originally paid, as well as today's approximate market. I shall be glad to give you more information if I have not made the proposition perfectly clear.

Yours very truly,

P. S. du Pont

38 38

Defendant's Exhibit (DP) No. 28

5559

E. I. du Pont de Nemours and Company

Members of Executive Committee to Each of Whom Pierre S. du Pont Transferred 400 Shares of the Capital Stock of Christiana Securities Company, April 8, 1921(1)

F. Donaldson Brown

W. S. Carpenter, Jr.

A. Felix du Pont

Lammot du Pont(2)

J. B. D. Edge

C. A. Meade

C. A. Patterson

F. W. Pickard

W. C. Spruance

---

(1) These transfers were equivalent to a transfer of 800 shares of the current common stock and 800 shares of the preferred stock of Christiana Securities Company to each of the persons listed, totalling 7,200 shares of the current common stock and 7,200 shares of the preferred stock.

(2) "Member of the du Pont family" as defined in paragraph 7 of the Complaint as amended on January 16, 1953.

3282

Defendant's Exhibit (DP) No. 29

LAIRD & COMPANY

NEMOURS BUILDING
WILMINGTON, DELAWARE

5560

RECEIVED
JUL 14 1937

July 9th
1937

ANSWERED
JUL 15 1937

LAMMOT DU PONT

Mr. Lammot du Pont
DuPont Building
Wilmington, Delaware

Dear Mr. du Pont:

For the past three weeks I have made a concentrated drive to sell a large block of Christiana Securities common stock in whole or in part. It occurred to me that in view of your interest in the company, it might be of interest to you to know the results of these efforts, together with the reactions and comments of the people interviewed.

People and organizations interviewed were -

H. R. Tudhope, President, A. E. Ames & Company, Toronto, head of the largest underwriting house in Canada.

S. R. McLaughlin, President, General Motors of Canada, Oshawa, Ontario.

F. W. Scott, Chairman of the Finance Committee, University of Virginia, Richmond, Virginia.

Henry Shattuck, Treasurer, Harvard University.

Channing H. Cox, President, Old Colony Trust Company, Boston, Massachusetts, in charge of investment of funds for Massachusetts Institute of Technology.

Robert Stone and Prescott Bigelow, partners of Hayden Stone & Company, brokers in Boston and New York.

Charles Gordon, partner Fahnestock & Company, with large offices and connections in London and Paris.

W. H. Farnum, Comptroller, Yale University.

In all cases I have offered the stock at approximately 25% discount from the book value.

Obviously, the most logical purchaser of this type of security is a foundation, a university, or any such organization that is so situated that it can sell stocks, particularly duPont, without paying a profits tax.

UNIVERSITY OF VIRGINIA: As a result of Mr. Philip duPont's gift of several million dollars in duPont stock to this University, which is held as a permanent investment, I suggested that a portion, at least, of this holding be exchanged for Christiana common. I interviewed personally Mr. F. W. Scott, Chairman of the Finance Committee of the University. After consideration he writes me as follows:

> "None of us could get very excited about the switch of the University's duPont into Christiana since Lehman Corporation, American International, and General American Investors (well known investment trusts) all with very active markets, are now selling at from 20% to 30% discounts under their book values, and we do not believe that Christiana Securities is cheap at a 25% discount considering the market for it is so narrow."

YALE UNIVERSITY and HARVARD UNIVERSITY: These people did not consider the stock cheap at the offering price in view not only of lack of marketability, but also because as an investment trust type of investment it lacks diversification.

S. R. McLAUGHLIN, PRESIDENT, GENERAL MOTORS OF CANADA: This individual I felt positive would be interested in the security inasmuch as he had available cash, together with the desire to give away this type of common stock holding to his children. After some three hours discussion with him and his financial secretary on the subject, at his request we withheld the stock from the market for three days. He wires as follows:

> "On account of nonsaleability and possible trouble under succession duty requirements have decided to take no action."

5562

H. R. TUDHOPE, PRESIDENT, A. E. AMES & COMPANY, TORONTO: As a result of Mr. McLaughlin's introduction, Mr. Tudhope took the matter of distribution of the stock in Canada and London under consideration. He writes -

> ".....but have finally come to the conclusion that while the security is of the type in which we would be normally interested, still the price at which the stock is selling, and the fact that it has not a ready market, limits so greatly the type of buyer one could approach that we would hesitate to discuss it with clients for fear we might handicap you in anything you might design to do in other directions, as we do not feel confident that we could satisfactorily complete the transaction. .....the holder is faced with the withholding tax on dividends and the uncertainties as to an increase therein, double succession duties if a Canadian resident, and is also seriously concerned with the labor unrest and government intervention in usiness affairs which is so prevalent."

HAYDEN, STONE & COMPANY, BROKERS: These gentlemen stated that if marketability were a consideration the stock should be split. But, in its present status, their firm could not sell the security.

FAHNESTOCK & COMPANY, LONDON & PARIS: Lack of marketability, coupled with fear of high taxation on foreign holdings makes it impossible to interest anybody abroad in this security, say these people.

CHANNING H. COX, PRESIDENT, OLD COLONY TRUST COMPANY, HANDLING INVESTMENT FUNDS FOR MASSACHUSETTS INSTITUTE OF TECHNOLOGY: This fund has 50 shares of Christiana Securities common and 1500 shares of duPont. Because of lack of marketability he would not consider any further investment in Christiana Securities under the circumstances.

With your permission, I should like to discuss the situation with you personally at an early date.

Sincerely,

Note: Illegible initials appear in the left hand margin. On the second page is written the word "true" and a question mark and a line following. Illegible handwriting appears in the left hand margin. "George" is handwritten at the end of the document.

3285

THIS INDENTURE, made the Thirty-first day of May in the year of our Lord one thousand nine hundred and twenty-four,

BETWEEN DELAWARE REALTY AND INVESTMENT COMPANY, a corporation of the State of Delaware, party of the first part, and PIERRE S. DuPONT and ALICE BELIN DuPONT, of the City of Wilmington, County of New Castle and State of Delaware, hereinafter called the "ANNUITANTS", parties of the second part,

WITNESSETH that the said party of the first part, for and in consideration of the sum of Thirteen Million Five Hundred Thousand Dollars ($13,500,000.00), to it in hand paid by the said Pierre S. duPont, by the conveyance, transfer and delivery, at and before the sealing and delivery hereof, of the following real and personal property, to-wit,-

44,000 Shares, Christiana Securities Company 7% Preferred,
49,000 Shares, Christiana Securities Company, Common
12,500 Shares, E. I. duPont deNemours & Company, Debenture
24,000 Shares, E. I. duPont deNemours & Company, Common
12,000 Shares, Hercules Powder Company, Common
11,000 Shares, Atlas Powder Company, Common
400 Shares, Longwood, Incorporated, Capital.
Lands in Chester County, Pennsylvania under lease to Longwood, Incorporated, (not including residence and fifty (50) acres surrounding same),

which said property is hereby accepted by the said party of the first part at the valuation of the said sum of money and the receipt whereof the said party of the first part doth hereby acknowledge, hath given, granted and confirmed, and by these presents

doth give, grant and confirm unto the said ANNUITANTS, severally and in succession, as hereinafter provided for, an annual annuity of Nine Hundred Thousand Dollars ($900,000.00), lawful money of the United States of America, to be paid to the said Pierre S. duPont annually during the term of his life and, after his death, to the said Alice Belin duPont annually during the term of her life, if she should survive the said Pierre S. duPont:

TO HAVE AND TO HOLD the said annual annuity of Nine Hundred Thousand Dollars ($900,000.00) unto the said ANNUITANTS, severally and in succession as aforesaid, payable and to be paid in equal monthly portions on the Fifteenth day of each month, in each and every year until the termination of the said annuity, beginning on the Fifteenth day of June next after the date hereof; and if it shall happen that the said annuity, or any part thereof, shall be in arrears and unpaid, in part or in the whole, for the space of thirty days, next after any of the said days or times of payment whereon the same should or of right ought to be paid, as aforesaid, then and so often and at all times thereafter, it shall and may be lawful to and for the said ANNUITANTS, or either of them, or the Executors, Administrators or Assigns of either of them, having an interest in said annuity, to institute any appropriate legal or equitable proceeding to compel the specific performance of this contract, or to collect any such amount or payment that may be in arrears, as aforesaid, or otherwise to enforce this contract, or to secure the said ANNUITANTS, or the survivor of them, against future breaches thereof, or to cancel this contract and enforce the re-

payment to the said Pierre S. duPont, if he be then living, or to the said Alice Belin duPont, if the said Pierre S. duPont be then deceased, of the then value of the said annuity calculated according to the table hereto attached, and/or to apply for, and obtain from a court of equity, the appointment of a receiver of the said party of the first part to marshal the assets of the said party of the first part and to apply the same in accordance with the provisions of this annuity contract.

And the said party of the first part, for itself and its successors, doth hereby covenant, promise, grant, and agree to and with the said ANNUITANTS and each of them, severally, his or her Heirs, Executors, Administrators and Assigns, by these presents, that the said party of the first part and its successors shall and will well and truly pay, or cause to be paid, unto the said ANNUITANTS, severally and in succession as aforesaid, or to the Executors, Administrators or Assigns of either of them, having an interest in said annuity, until but no beyond the death of the survivor of said ANNUITANTS, the said annuity of Nine Hundred Thousand Dollars ($900,000.00) annually, above mentioned, in and upon the several days and times above mentioned, in manner and form above expressed, according to the true intent and meaning of these presents; and the said party of the first part, for itself and its successors, doth hereby further covenant, promise and agree to and with the said ANNUITANTS and each of them, severally, his or her Heirs, Executors, Administrators and Assigns, by these presents, that it, the said party of the first part, shall not and will not distribute by way o.

dividend or otherwise to its stockholders, or use to pay salaries or for any other purpose than paying the annuity hereby granted, any of the income or earnings, if any, received by the party of the first part from the real and personal property hereinabove mentioned and referred to as constituting the consideration paid to the party of the first part for the granting of the annuity granted hereby, or any of the income or earnings, if any, received by the said party of the first part from any property, of any nature whatsoever, into which the said above mentioned real and personal property may have been converted by the said party of the first part, but, on the other hand, all of any such income or earnings shall be applied to the payment of the said annuity and if, at any time before the termination of the said annuity, there shall be an excess of such income or earnings above the amount necessary to pay the instalment of said annuity then due or falling due, such excess shall be accumulated by the said party of the first part and held or invested by it as a reserve and guarantee fund to secure the payment of the said annuity, until and unless the reserve and guarantee fund, thus accumulated or in any other manner derived, applicable to this annuity contract and to the payment of the annuity granted hereby, shall amount to at least thirty per cent (30%) of the value, calculated according to the said table, of the said annuity, so that the aggregate of said reserve and what remains of the original consideration paid for said annuity shall equal one hundred and thirty per cent (130%) of the then value of said annuity, so calculated, and thereafter such reserve shall not, at any time, be reduced below

thirty per cent (30%) of such value by any payment therefrom other than a payment of the annuity hereby granted; and the said ANNUITANTS, or either of them, shall be entitled to apply to any court of competent equitable jurisdiction for injunctive relief to prevent a breach of this covenant whenever there may appear to be danger thereof, or, in case of a breach thereof, to institute any appropriate legal or equitable proceeding to cancel this contract and enforce the re-payment to the said Pierre S. duPont, if he be then living, or to the said Alice Belin duPont, if the said Pierre S. duPont be then deceased, of the then value of the said annuity, calculated according to the said table, and/or to obtain the appointment of a receiver as hereinabove provided for.

The annuity hereby granted shall terminate with the death of the last surviving annuitant and there shall be an adjusted payment for the interval between the date of the last monthly payment of annuity preceding such death and the date of such death.

IN WITNESS WHEREOF the said party of the first part hath caused this Indenture to be duly executed by the signatures of its proper officers and by the affixation of its corporate seal, the day and year first hereinabove written.

DELAWARE REALTY AND INVESTMENT COMPANY

By _____
President.

Attest: _____
Secretary.

Table, referred to in the foregoing indenture, of present values of the annuity thereby granted, based on American Annuitants' Select Mortality Tables (1920 - males and females), an interest rate of approximately 4½% per annum, birth of male annuitant January 15, 1870, and birth of female annuitant July 15, 1871.

Date	Present Value
May 29, 1924	$13,500,000.
Dec.31, 1924	13,357,998.
" " 1925	13,114,296.
" " 1926	12,871,935.
" " 1927	12,631,428.
" " 1928	12,390,930.
" " 1929	12,149,172.
" " 1930	11,901,978.
" " 1931	11,650,104.
" " 1932	11,393,838.
" " 1933	11,133,495.
" " 1934	10,869,480.
" " 1935	10,601,973.
" " 1936	10,331,163.
" " 1937	10,057,590.
" " 1938	9,781,659.
" " 1939	9,503,613.
" " 1940	9,223,974.
" " 1941	8,943,201.
" " 1942	8,661,555.
" " 1943	8,379,684.
" " 1944	8,098,083.
" " 1945	7,817,139.
" " 1946	7,537,482.
" " 1947	7,259,157.
" " 1948	6,983,253.
" " 1949	6,709,995.
" " 1950	6,439,599.
" " 1951	6,172,992.
" " 1952	5,910,192.
" " 1953	5,651,766.
" " 1954	5,398,380.
" " 1955	5,149,998.
" " 1956	4,907,286.
" " 1957	4,670,091.
" " 1958	4,438,917.
" " 1959	4,214,115.
" " 1960	3,995,811.
" " 1961	3,784,374.
" " 1962	3,578,400.
" " 1963	3,379,293.
" " 1964	3,185,334.
" " 1965	2,997,324.
" " 1966	2,811,186.
" " 1967	2,624,931.
" " 1968	2,433,906.
" " 1969	2,233,683.
" " 1970	2,035,701.
" " 1971	1,823,013.
" " 1972	1,571,283.
" " 1973	1,250,226.
" " 1974	921,978.
" " 1975	762,075.
" " 1976	555,840.
" " 1977	450,000.

5579

STATE OF DELAWARE, }
NEW CASTLE COUNTY. } ss.

BE IT REMEMBERED, That on this Thirty-first day of May, in the year of our Lord one thousand nine hundred and twenty-four, personally came before me, the subscriber, a Notary Public for the State of Delaware, Charles Copeland, President of Delaware Realty and Investment Company, a Corporation of the State of Delaware, party to this Indenture, known to me personally to be such, and acknowledged this Indenture to be his act and deed and the act and deed of the said Delaware Realty and Investment Company; that the signature of the President is in his own proper handwriting; that the seal affixed is the common or corporate seal of the said Delaware Realty and Investment Company; and that his act of igning, sealing, executing, acknowledging and delivering said Indenture was duly authorized by a resolution of the Board of Directors of the said Delaware Realty and Investment Company.

GIVEN under my hand and seal of office the day and year aforesaid.

Aaron Finger
Notary Public.

3302

Paul B. Belin, Esquire,
701 Jefferson Avenue,
Scranton, Pa.

Dear Paul:

Thanks for your reply to my letter in regard to "selling out". You are wrong in assuming that my move has been guided by questions of taxation, in fact, this plan has been in contemplation for some time for the reason that I think it best to pass on the burdens when one has yet opportunity to be of assistance to the new bearers. If Irenee, Lammot and I had been equally interested in the du Pont Company and if I had had a flock of children, perhaps the situation would have been different. But I had by far the largest share, with no direct heirs. The uncertainties concerning this large investment would certainly prove a burden to others if I should become incapacitated or even if I only should become unduly secretive, as many do as years go by. I think those who are in active charge of the business are entitled to know the final disposition of this property. Looking at the problem in another way, I am much less active in the details of the business than I was during the war or prior to that time. My usefulness as an adviser will probably be as great without actually owning this block of stock, and, as I remarked before, having no incentive to further accumulation, nothing is to be lost on that score.

In some ways I would have preferred selling out to the next generation ie, to my nieces and nephews, but, as the greater part of them are now quite young, I doubt if time will permit awaiting their development to determine which

of the crowd are to be the likely workers in the business. Moreover, the older members of the generation—especially Belin and Hallock—will profit if they are made to realize the burden that they should assume. Of course, I have talked over these matters with Irenee, Lammot and the brothers-in-law at various times and in various ways, without reaching any determination; so that it was not surprising that they should make an offer to me.

I do not know the details of what they are going to do, but Rod told me yesterday they would divide the investment into eight shares; one to Irenee; one to Lammot; one to Belin; one to Ethel's three children; one each to Lou and Bob, Mary and Winder, Bella and Rod, and Peggy and Ruly. If I had had choice in the matter I should have allotted the stock in equal shares to the nieces and nephews. However, the immediate division among fourteen different people does not leave too much concentration in any one person, and I think it fairer to sell

—2—

out, leaving to a number of capable people the decision as to the ultimate disposition of the stock than to attempt to decide so important a matter myself, especially as I could not expect much advice from the brothers and sisters and the "in-laws" when their own interests are intimately concerned.

On the tax question; One never knows what is going to happen and is lucky if he knows what has happened. When inheritance taxes were lower, I provided all the life insurance that I could get in order to make the du Pont investment safe in event of my death. In my position, this seemed a useless locking of up income; but I could find no

other prudent course. If this offer to purchase had not been made, I should have been at considerable loss in disposing of a large part of my holdings and I do not think that the destructive effects of liquidating so large a block of securities would have helped the du Pont Company; certainly the stock would have been reduced in value for a long period of time, even beyond that required to liquidate my shares.

Again, History repeats itself. When the old crowd sold out to Coleman, Alfred and me, there were practically no buyers on the market and an attempt to sell elsewhere would have reduced the value of the property. We came along at an opportune time, and, I am sure, saved the original holders a great deal of money by taking over the property "enbloc" from them. Again, when Coleman determined to sell out in 1915, I do ibt very much if he could have obtained such a high price for his stock if Irenee, Lammot, John, Ruly, Felix and I had not been interested and stepped up with an offer. It is really the most satisfactory and economical way of passing on large interests, i.e., selling out to the younger men who know the business and are willing to assume the burden.

I am interested in your views on the general situation. To my mind the worst of our troubles is the one least talked about, i.e., the present utter disregard for law; first, by the lawmakers; second, by the enforcers; and third, by those to whom the law applies. As a cold, hard fact we are rapidly asuming a position where we have no laws because what masquerade as such are either so indefinite that no lawyer or Court, let alone an ordinary man, can tell what they mean, or are so impossible of enforcement that it is foolish to attempt obeyance, and the officers and Courts

Mr. Charles Stewart Mott,
General Motors Bldg.,
Detroit, Michigan.

My dear Mott:

Your letter of July 15th has remained unanswered until my return last Monday from Europe.

As to Christiana Securities Company common stock, I know of nothing that is likely to change the status excepting possibly adverse legislation in Washington, such as the legislation now proposed to further annoy corporations and individual effort. However, I am sure you are as good or better judge of this situation than I am.

The Christiana Securities Company common stock has varied from 75 to 80% of the break-down value of the stock as expressed in the value of du Pont shares. However, the Government does not accept this as values made for the purpose of taxation. Since receipt of your letter this week, I have learned of a tentative offer of 73% of the break-down value for 600 shares of the common stock.

I have been contemplating sale of part of my holdings of Christiana Securities Company in order to obtain cash for other purposes, but I feel doubtful about the wisdom of going as low as 73% or even 75%.

The above is about the situation as I see it at present.

Sincerely yours,

NOTE: PS du Pont is stamped diagonally across the document.

Defendant's Exhibit (DP) No. 31

Letterhead of
LAIRD, BISSELL & MEEDS
DU PONT BUILDING
Wilmington, Delaware

October 26, 1939

Mr. Pierre S. du Pont,
Wilmington, Del.

Dear Mr. du Pont:—

We are terribly embarrassed to report that we have sold only two shares of Christiana common for you to date.

About the time we received your order a substantial lot of Christiana was offered by another broker at about our price, which spoiled the market for sales at 77% or better.

As mentioned in our letter of the 6th, we refrained from making some sales on a 77% basis, as the du Pont market broke down to 176½. We subsequently received instructions on October 9th to sell Christiana so long as du Pont did not go below 173.

It has been our experience that as du Pont advances it becomes more difficult to sell Christiana above 75% of break-up.

We would like to submit, for your consideration, a method of arriving at your minimum prices of Christiana.

Instead of limiting sales to 77% of break-up, regardless of the price of du Pont above 173, we would suggest that you give us some latitude for making sales.

Our suggestion is as follows:

Disregard General Motors market changes and fractional changes in the price of du Pont.

Consider 2649 as your low price of Christiana on a 77% basis when du Pont is 173, and progressively advance the price of Christiana but reduce the percentage to 75% when du Pont is 183 or higher.

—2—

The following tabulation shows the minimum prices for Christiana, according to the above suggestion:

Christiana	du Pont	%
2649	173	77
2659	174	—
2668	175	—
2676	176	—
2684	177	—
2692	178	76
2700	179	—
2708	180	—
2716	181	—
2724	182	—
2732	183	75
2748	184	75
2763	185	75
2778	186	75
2794	187	75
2809	188	75
2824	189	75
2840	190	75

2

The following quotations and comparisons may be helpful:

Date	Bid	Asked	du Pont	Approx. Bid Basis	Proposed Minimum Basis
10/21	2750	2770	183	75.5%	2732
10/24	2730	2760	181	75.7%	2716
10/25	2750	2780	183	75.5%	2732
10/26	2770	2800	184	75.7%	2748

As you were willing to sell Christiana at 2649, it would seem advantageous to take advantage of the higher prices of du Pont, to sell Christiana at prices higher than your minimum, even though, percentagewise, the basis is a little lower.

Should you approve the above changes, we will use our best endeavors to obtain prices better than the minimum prices shown for Christiana.

—3—

As mentioned to Mr. Montaigne from time to time, the usual commission on Christiana is $10. We have been charging you $5.00 commission. However, should you wish, we can buy or take down the stock, as sold, without charging a commission. I am confident it is to your advantage to allow sales at the best possible price and pay the minimum commission.

We shall continue our efforts to make sales on a 77% basis.

Thank you very much for this nice business.

Sincerely yours,

Cecil Backus

CFB/wan

NOTE: The number 596 is written in the upper right hand corner.

Defendant's Exhibit (DP) No. 32 5567

Letterhead of

THE EQUITABLE LIFE ASSURANCE SOCIETY
OF THE UNITED STATES
120 Broadway, New York
W. A. Day, President

WILLIAM J. GRAHAM
Second Vice-President
WJG/C5

May 22, 1924.

Mr. F. A. McHugh,
E. I. du Pont de Nemours and Co.,
Wilmington, Del.

Dear Mr. McHugh:

Confirming the information given you over the telephone this afternoon, I first want to state that the rates which I gave you this morning were our old rates and have not been in use since January 1, 1924.

The two types of annuities which are most common and serve the greater purpose are, first the Life Annuity which contracts to pay a certain amount annually, semi-annually, quarterly or monthly, the first payment being a year, a half year, a quarter year or a month respectively after the purchase of the annuity. Payments continue as long as the annuitant lives. Upon the death of the annuitant no further payments are made. For your information I quote below the rates for this type of annuity at age 55.

C10

3290

Price of Annuity		Annuity Purchased by $1,000 Income Payable			
$100 Annually	$10 Monthly	Annually	Half-yearly	Quarterly	Monthly
$1,223.40	$1,536.78	$81.07	$39.70	$19.65	$6.50

The other type of annuity known as Refund and Cash Refund Annuity, provides for payment in the same manner with the exception that (a) under a Refund Annuity in event of the annuitant dying before the annuities paid equal the amount of capital invested, the annuity payments under the Refund Annuity form will be continued until the return equals the price paid; (b) under the Cash Refund Annuity, the difference between the annuities paid and the capital invested is returned in cash.

	Price of Annuity		Annuity Purchased by $1,000 Income Payable			
	$100 Annually	$10 Monthly	Annually	Half-yearly	Quarterly	Monthly
Refund	$1,381.50	$1,714.50	$72.39	$35.52	$17.60	$5.83
Cash Refund	1,413.80	1,753.26	70.73	34.73	17.21	5.70

None of these contracts are participating, but under the Refund and Cash Refund annuities liberal surrender values are allowed. Under a Life Annuity there are no surrender values.

For Income Tax purposes, Annuity Payments are not taxed until the payments to the annuitant exceed the price paid for the annuity. There are other special forms of annuities issued by the Society, an outline of which we would be glad to send you, if you are interested.

We will be glad to give you any further information or assistance that we can in your study of annuity contracts if you will let us know your wishes.

Very truly yours,

JOHN M. CLAYTON,
Secretary to Mr. Graham.

3

Defendant's Exhibit (DP) No. 33 5570

Wilmington, Delaware,
May 30th, 1924.

Mr. Pierre S. duPont,
Wilmington, Delaware.

Dear Sir:

In an endeavor to close up our verbal negotiations of the past week, Delaware Realty & Investment Company, a Delaware corporation, hereby makes you the following definite and firm offer, viz., the said Company offers you and your wife, Alice Belin duPont, severally and in succession, an annuity of $900,000. annually, to be paid by said Company in such installments as you may elect, in consideration of your payment to the said Company of the sum of Thirteen Million Five Hundred Thousand Dollars ($13,500,000.), which sum may be paid by you, at your pleasure, either in cash or by delivery to said Company of the following securities, viz.:

44,000 shares Christiana Securities Company 7% Preferred;

49,000 shares Christiana Securities Company Common;

12,500 shares E. I. duPont deNemours & Company Debenture;

24,000 shares E. I. duPont deNemours & Company Common;

12,000 shares Hercules Powder Company Common;

11,000 shares Atlas Powder Company Common;

400 shares Longwood, Incorporated, Capital;
Lands in Chester County, Pennsylvania, under lease to Longwood, Incorporated, (not including residence and fifty (50) acres surrounding same.)

For your information, though not to be regarded as a condition upon which you may accept this offer, the said Delaware Realty & Investment Company states that it expects to forthwith increase its authorized and paid-in capital stock so that the same shall not be less than the sum of $800,000.

In case of your acceptance a contract obligating the said Company to the payment of said annuity will be immediately tendered you for your approval.

Yours very truly,

DELAWARE REALTY & INVESTMENT CO.,

By /s/ C. COPELAND PREST.

Accepted

ACCEPTED:

/s/ PIERRE S. DU PONT

May, 30, 1924

E

Defendant's Exhibit (DP) No. 34

INDENTURE GRANTING ANNUITY

-from-

DELAWARE REALTY AND INVESTMENT COMPANY

-to-

PIERRE S. DuPONT

-and-

ALICE BELIN DuPONT

refuse to enforce literally. The net result is that we are getting to be as much at the mercy of the individual office holder as were people under the old system of France under the monarchy. This system is bound to lead, and has already led, to bribery and corruption of the worst kind. If we succeed in enforcing.

our prohibition laws, it will be because we have reduced the whole scheme to a system of graft in the form of tolls that must be paid the officers in order to secure a settlement with them. It is easy to point to a condition where arrests and violations are less frequent when officers of enforcement adopt a system of payments by their victims in order to avoid arrest. I do not agree with you as to the better conditions that seem to have been brought about by prohibition. We were fast coming to these conditions at any rate. It was very noticeable in clubs and at colleges before the war, and I believe that the moral effects of the war would have been distinctly in favor of less tippling had we never heard of the Prohibition Act. I agree with you that doing away with the saloon as it had been operated before the war was a good thing, but this could have been accomplished without prohibition by closing all the saloons if that had been the best way of going about it. Even this would have been imprudently harsh and would have been an invasion of personal rights.

A lot of people got the notion that alcohol is a bad thing to take for some, and by a majority or perhaps a minority vote managed to get through an act prohibiting its use by all including those who know not only how to use it rightly, but do so. Why should not a group of divorcees get the notion that marriage is a failure and that a system of free

love is best and then put through a bill prohibiting marriage or the claiming of a wife or husband? I often wonder how our good prohibition people would feel if such a thing were put in the constitution. I am sure they would have quite a different view on law enforcement. Or, to touch another crowd; if the socialistically inclined got through a bill leveling all property ownership, do you think that many, including those who are parlor socialists and those who are paid for promoting socialism, would buckle down and obey the law without complaint when they discovered that their own property was affected as well as the property of those they had heretofore assumed to attack?

It is not to be wondered that a wave of immorality and lack of consideration of human rights should be prevalent after the experiences of the war, when by the nature of things, all moral laws and laws of individual right were thrown overboard. I am hopeful of the swing of the pendulum in the opposite direction. My somewhat slight acquaintance with history lends us to believe that this is always the case, and it is natural that it should be so. Our duty will be to keep things on as even a keel as possible, until the reform sets in. For

—4—

the moment there seems to be a glimmer of light in Cleveland in the determination of the Convention to stand up for things that are worthwhile and not compromise with those who have no idea of playing fair.

Affectionately,

(s) Pierre S. du Pont

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Defendant's Exhibit (DP) No. 36 5585

LAW OFFICES

ROBT. H. RICHARDS
AARON FINGER
JAMES I. BOYCE

4060 Du PONT BUILDING
WILMINGTON, DELAWARE
Bell Telephone 411

February 12, 1925.

Mr. Charles Copeland,
DuPont Building,
Wilmington, Delaware.

My dear Copeland:

I acknowledge your letter of February 10 enclosing a memorandum of reasons for making the annuity agreement with the Delaware Realty and Investment Company. I can see no legal or other objection to the memorandum and am returning it herewith.

Yours very truly,

Robt. H. Richards.

RHR MMA
Encl.

—2—

The management of the du Pont Co. having been in the hands of the du Pont family for more than a century, the business should be regarded as a sacred trust to be carried on by the coming generation. As the Company has steadily progressed in importance from a small beginning to a concern of international standing, the men to whom it will pass must be trained to handle matters of great magnitude, and in order that its prestige may not only be maintained but increased to keep abreast of changing conditions, its traditions must continue to be part of the family honor. The fortunes of the family and the corporation are identical and rise and fall together.

The largest interest in the company is that of Mr. Pierre S. du Pont, who has no direct heirs but his wife, after whose death his next of kin being his brothers and sisters and their children. His brothers are now actively interested in the management; their children are too young and inexperienced to assume any measure of control. The property carries with it a great responsibility and were the children to receive it before they were prepared to accept it there is danger that their holdings might be dissipated and pass into the hands of outsiders or become depreciated through unwise management of the business. By strengthening the hands of the brothers who are in control and training the younger generation to be ready for their burden, which in the course of events must come, the vital interests of the company and the family would be maintained.

In the event of his death, the settlement of his estate might necessitate a sacrifice of his holdings which would create a disturbance of the market adversely affecting the credit of the Company or throw the control of the Company into hostile or incompetent hands.

This concern over the disposition of the estate of a man whose life is the greatest asset the company has ever had, whose counsel is accepted with profound respect by all, and whose place in the family is enshrined in their love and esteem, would be the grossest materialism unless his advantage were also adequately considered. Mr. du Pont has devoted his great ability to building up the business to its proud position and with the accumulation of wealth has successfully endeavored to spend his money wisely where it could do the most good for others. He needs more time for the expansion of his many plans for the public welfare.

Little by little he has passed along to his brothers the details of management, holding himself always ready to aid with counsel and advice.

His brothers have therefore devised a plan by which a large income can be assured to him, free from the annoyance of details, business cares and worries over investments, at the same time preserving the control in competent, friendly hands and training the younger generation so that they may be competent to carry on the business when the responsibility falls upon them. They are therefore presenting the following arrangement for his consideration:

—3—

Letterhead of

CHARLES COPELAND
Wilmington, Del.

Dec. 9, 1924.

Dear Rod:

It has seemed to me that in connection with the offer to Pierre to make the annuity arrangements we should have in our file some definite reasons for such action; one that could be understood by the Revenue Agt. when the returns are audited. I have submitted the enclosed to Winder suggesting that it might be adopted by The Board or some similar paper, if you prefer—and made a part of our minutes. Will you please read it over and use your pencil freely. I have not discussed it with Richards as I wanted the idea of the crowd first. My references to P. S. may seem a little flowery, but I put them in to emphasize the point.

Bob.

I approve; think your idea is good though I doubt if the tax people would pay much attention to the intent.

It can do no harm and it is certainly worth having on our records.

ROD.

NOTE: "Winder, please not return. CC" is written in the lower left hand corner of the first page. In the left hand margin of the second page appears the word "are" with a line going to the word "being" in the third sentence of the second paragraph. The italicized paragraph on the second page is on a separate sheet; an arrow indicates that it is to be inserted after the second paragraph on the second page. Italics indicate handwriting.



Defendant's Exhibit (DP) No. 37 5589

February 12th, 1914.

Henry P. Scott, Esquire,

Wilmington, Delaware.

Dear Mr. Scott,

I have read with a great deal of interest the annual report of the General Motors Company for the year ending July 31, 1913, which I am returning herewith.

I can attribute the low price at which this stock is selling only to the fact that they are not paying dividends. I cannot understand why it is not worth at least $100 per share and my belief is that on an earning basis, which with proper management is bound to continue, the stock is worth at least $200 per share and anyone buying it now and holding it for a year will double his money, and if he holds it for two years, I think it will be selling for from $150 to $200 per share. The net assets of the Company, excluding good-will, after taking care of all liabilities, leave a value of approximately $110 per share for the common stock. The Company could easily put this stock on a 10% dividend basis, issue $9 000 000.00 additional common at par to their stockholders, using the proceeds of sale to take up their notes, and be in a position of having no indebtedness other than current debts, with an issue of approximately $15 000 000 preferred stock and $25 000 000 common stock.

3312

Their earnings last year were - - - - - - - - - - - - - $8 184 000
from which deduct their preferred dividend - - - - 1 048 000
leaving a balance for the common stock of - - - - - - $7 136 000,
and this is equivalent to over 28% on an issue of $25 000 000 common stock. If this common stock paid 10% dividends, it would be paying but one-third of its earnings, which would certainly be ultra-conservative.

My best advices are that earnings for the present year will run at least $2 500 000 over last year, which would be equivalent to an additional 10% on $25 000 000 of common stock.

Since seeing you I have purchased another block of this stock.

Sincerely yours,

Defendant's Exhibit (DP) No. 38

5591

February 28th, 1914.

Wm. A. Brady, Esquire,

New York City.

My dear Mr. Brady,

I thank you very much for your telegram of congratulations, which I assure you is very much appreciated indeed.

In regard to General Motors, I think that this stock is easily worth double what it is selling at at the present time and I feel perfectly certain in my own mind that this stock will be selling about 120 within a year or eighteen months at the outside, and it may be that it will be selling there within six weeks. The Company is most excellently managed, has tremendous resources and a very small capitalization indeed, and I do not hesitate in strongly advising you to buy this stock even at present market prices. I bought 500 shares myself at 70½, in addition to the stock I previously purchased about which I told you. I would not recommend, however, that this stock be bought by anyone in quantities they could not protect in case of a material drop in price. I say this for the reason that the issue is very small indeed, only $16 000 000, and it would be possible for you or I, or anyone else to buy $1 000 000 and put the price to par today, or likewise we could

3314

put it down to 50 by short selling, but as soon as our $1 000 000 was exhausted, the fundamental conditions of the Company are such as would make the stock bound back to its present figures or higher.

I note what you say about cancelling the concerts. I think this is rather a wise move, for the reason that Tehran appears to have treated us very badly indeed. I am sure the concerts would have been highly successful in Wilmington and there are going to be a very great many disappointed people. Nevertheless we can make up for this in some other way, and next year perhaps offer something even better.

Sincerely yours,

3315

COPY, Mr. Raskob

October 26, 1915

J. J. Storrow, Esquire,
Boston,
Massachusetts.

My dear Mr. Storrow:

As you have probably learned from Mr. Raskob, he and I, with Mr. Lammot Belin, are arranging to visit Detroit on Wednesday of next week. After this it might be well to have another meeting on the Chairmanship of the Finance Committee. I hope that the suggestion of Mr. Wiggin will eventually meet with the approval of yourself and Mr. Nash; but it is quite necessary that we all be candid in our expressions of approval, or disapproval. Both Mr. Raskob and I feel that we have not sufficient time at our command to warrant accepting your suggestion as to the Chairmanship. We will hold ourselves ready to cooperate in any plan that may be agreed upon as best for the interests of the General Motors Company.

Very truly yours,

18

NOTE. "P S Du Pont" is stamped across letter.

Defendant's Exhibit (DP) No. 40

5594

March 21, 1916

L. G. Kaufman, Esquire,

New York City.

My dear Mr. Kaufman:

Owing to Mr. Raskobs absence from the office I have only today found opportunity to talk with him about your offer. We both feel hesitency in accepting an offer that is so generous, in view of the time that has elapsed since the exchange of stock was originally suggested to us; however, apart from this feeling, neither of us is yet convinced that we would be taking a proper step in making this exchange, in view of our relations to the General Motors Company and its stockholders in general. On that account, we have decided not to accept your offer. Mr. Raskob asked me to thank you on his part for your offer, as I do for myself, personally.

Very sincerely yours,

PS DU PONT

3317

Defendant's Exhibit (DP) No. 42

5595

January 24th, 1917.

W. C. Durant, Esquire,
600 West 57th Street,
New York City.

Dear Mr. Durant,

GENERAL MOTORS COMPANY DIVIDEND POLICY

I have been giving a great deal of thought and attention to the matter of establishing a permanent dividend policy for the General Motors Company, the common stock of which Company I consider conservatively well worth $200.00 per share, and speculatively worth considerably more than this figure. If I am right in this opinion, it should be possible to put the stock on a conservative dividend basis of 12% in order to return 6% on an investment in this stock at $200.00 per share. In arriving at my conclusions I have used certain assumptions and certain figures as follows:—

1st. A staple industrial operation in this country, in my opinion, should return at least 12½% on the capital (excluding good will) actually employed in the business.

2nd. The General Motors Company has and for the next five years will undoubtedly enjoy earnings far in excess of an amount equal to 12½% on the total capital assets employed by it.

3rd. The actual new capital put in the General Motors Company for the year ending July 31, 1916, was all supplied out of earnings and amounted to $14,682,438.00. For the year ending July 31, 1915 this amount was $7,771,732.00.

4th. My figures assume that without the sale of any new stock at all we can place the common stock on a 12% dividend basis and put back into the business out of the earnings the following amounts:

C56

3318

1917	$ 23,392,978.00
1918	14,000,000.00
1919	10,000,000.00
1920	6,000,000.00
1921	6,000,000.00
or a total in five years of	$59,392,978.00

5th. Should any new capital in addition to this $59,000,000.00 supplied from earnings be needed in the business, it can be easily supplied through the sale of common stock at $150.00 per share, the rights to subscribe to this stock to be offered to the common stockholders of the Company and should be quite valuable.

I have assumed that the future earnings of the Company will be as follows:

1917	$ 28,067,978.63
1918	25,000,000.00
1919	21,000,000.00
1920	17,000,000.00
1921	17,000,000.00
or a total in five years of	$108,067,978.63

It would seem that this estimate of earnings is quite conservative as it seems that in 1921 we are only earning $17,000,000.00 regardless of the fact that we will have employed in the business $59,000,000.00 more than we have in 1917 when the estimated earnings are $28,000,000.00.

With the above explanation, my figures work out roughly as follows:

The total assets employed August 1st, 1916 may be stated as follows:

Real Estate, Plants and Equipment	$24,347,500.14	
Less Reserve and Depreciation	5,981,095.44	
Balance	18,366,404.70	
Miscellaneous Investments	358,428.50	
Current and Working Assets	53,882,188.17	
Total capital employed excluding patents, agreements, good will, etc.	$72,607,021.37	

Forward			$72,607,021.37
Estimated earnings 1917		$28,067,978.83	
Preferred stock dividend, say	$1,200,000.00		
Common stock dividend at 3% payable May 15th, say	3,475,000.00		
Total dividends		4,675,000.00	
Balance of earnings put back into business			23,392,978.63
Total capital employed August 1st, 1917			$96,000,000.00
Estimated earnings 1918		$25,000,000.00	
Dividends:			
6% on preferred stock	$1,200,000.00		
12% on common stock	9,800,000.00		
Total dividends		11,000,000.00	
Balance of earnings put back into business			14,000,000.00
Total capital employed August 1st, 1918			$110,000,000.00
Estimated earnings 1919		$21,000,000.00	
Preferred and common stock dividends		11,000,000.00	
Balance of earnings put back into business			10,000,000.00
Total capital employed August 1st, 1919			$120,000,000.00
Estimated earnings 1920		$17,000,000.00	
Preferred and common stock dividends		11,000,000.00	
Balance of earnings put back into business			6,000,000.00
Total capital employed August 1st, 1920			$126,000,000.00
Estimated earnings 1921		$17,000,000.00	
Preferred and common stock dividends		11,000,000.00	
Balance of earnings put back into business			6,000,000.00
Total capital employed August 1st, 1921			$132,000,000.00

It will be seen from the foregoing that the total capital employed on August 1st, 1921 is estimated at $132,000,000.00, 12½% of which equals $16,500,000.00. I feel that an industry in this country which is stabilized to the extent of being satisfied with 12½% earnings on its total capital employed can most conservatively arrange to pay two-thirds of its earnings in dividends, putting the other one-third back into the business

and, if this proves insufficient to meet the growing demands of the business, additional capital should be supplied through the sale of stock, and such sale of stock can be easily accomplished in a company having an earnings record of 12½% on the actual capital employed in the company, two-thirds of which earnings are paid out in dividends. This policy has been most carefully thought out and has been in successful operation in the Du Pont Company for more than ten years past.

Personally I feel that there are much better prospects in store for the General Motors Company than the figures used herein indicate, but I have purposely used conservative figures in order that when you and the Finance Committee agree on a proper dividend policy, the figures presented to the Board of Directors in support of that policy may be such as to give them a feeling of security in the policy recommended for their adoption.

I am taking the liberty of sending a copy of this letter to Mr. Kaufman, Chairman of our Finance Committee. I expect to be in New York to attend the meeting of the Board of Directors of The Chatham & Phenix National Bank Friday morning at 11:30 o'clock and will be there the balance of the day and also Saturday and will be glad to

discuss this question with you, if you can find a little time to give to it then. If not, we can arrange to go over it later.

Mr. du Pont is leaving tomorrow for California to return on February 20th. In talking this matter over with him this afternoon, he asked me to say to you that he recommends and strongly urges that the Directors adopt a policy of placing the General Motors Company stock on a regular dividend basis of 12% per annum, payable 3% quarterly. He feels that this property is well worth an amount equal to $200.00 per share on the common stock and that the owners thereof should receive dividends which will give them a proper return on a conservative estimate of the worth of their stock.

I am leaving for Palm Beach on February 8th and expect to return shortly after the first of March. Mrs. Raskob is going with me. A little vacation would do you a tremendous amount of good and it has just occurred to me that possibly we can persuade you and Mrs. Durant to go south with us or meet us there later. I am sure we would all have a most delightful time and we would secure a much needed rest. Please think this matter over seriously and then write and tell me you will come.

With kindest personal regards, I remain

Sincerely yours,

NOTE: In the fourth paragraph the amount of earnings were faded and have been written as $14,682,438.00; The fifth paragraph 7,771,732.00 was written over the faded numbers; and in the sixth paragraph the words at the end of the lines, "the sale, common stock on a, and business out of" have been written over. On the second page in the last paragraph the numbers have been written over in pencil.

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Defendant's Exhibit (DP) No. 43

W. C. Durant, President,
General Motors Company,
600 West 57th Street,
New York City,

Dear Mr. Durant,

In order to secure a better and more concentrated organization, and incidentally avoid the excessive cost in the way of duplicate income taxes which are now becoming quite heavy, and to clarify the atmosphere generally, I think it would be a very good plan, and I suggest that the General Motors Corporation consider seriously the matter of purchasing the properties of the Chevrolet Company. I do not feel sufficiently conversant in detail with the Chevrolet affairs to outline a plan of purchase except in a very rough way, as follows:

The Chevrolet Company is capitalized at $70 000 000.00, $50 000 000.00 of which was issued for General Motors Company stock and $20 000 000.00 of which represents its total properties excepting its General Motors Corporation stockholdings. Inasmuch as the earnings of the General Motors Corporation are equal to approximately 35% on its common stock and inasmuch as the earnings of the Chevrolet Company from sources other than its General Motors Company holdings are equal to approximately 35% on the $20 000 000.00 of capital above referred to, it would seem to me highly advisable for the General Motors Company to make an offer to the Chevrolet Company to purchase its

entire, plant, properties, etc; In fact, all of the assets of the Chevrolet Company except the Chevrolet Company stockholdings in the General Motors Corporation, paying therefor, say, $20 000 000.00 of General Motors Corporation common stock plus possibly some amount in cash: The Chevrolet Company would then be in the position of having no properties whatever, but having in its treasury $70 000 000.00 of General Motors Corporation common stock with some cash, and having outstanding $70 000 000.00 of its own capital stock.

The plan would further contemplate that the Chevrolet Company should then be dissolved by distributing one share of General Motors Corporation stock to each share of Chevrolet Company stock outstanding together with any cash that might be left after the payment of its attorney's fees and other miscellaneous expenses.

—2—

In this way the General Motors Corporation would secure a perfectly splendid low priced car which would round out its line of cars in excellent shape and the stockholders of the Chevrolet Company would secure a direct interest in a company with a diversant line of cars and would be relieved of paying the duplicate income taxes which the Chevrolet Company will be compelled to pay on all dividends which it will receive from its holdings in the General Motors Corporation.

As previously stated, I am not sufficiently conversant with the figures in detail, but feel that those used herein are approximately correct and I would very strongly urge that this or some similar plan be adopted after careful consideration.

I am leaving for Palm Beach on February 8th and will return shortly after the first of March, after which time I hope we will have opportunity to go over this matter together with the dividend matter, about which I wrote you a few days ago.

Sincerely yours,

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Defendant's Exhibit (DP) No. 45

5603

DURANT = W. C. Durant, Associates or Nominees.

DUPONT = P. S. du Pont, Associates or Nominees.

—0—

Durant-Du Pont agree to form Securities Company under Delaware laws with 7% cumulative non-voting preferred stock and common stock for the purpose of buying Chevrolet and General Motors Company common stocks.

Paying $50.00 in preferred stock and $70.00 in common stock for each share of Chevrolet Motor Company and $66⅔ in preferred stock and $33⅓ in common stock for each shares of General Motors Company

Durant agrees to sell 162 000 shares Chevrolet and 120 000 shares General Motors Company common stock to Securities Company on above basis.

Durant agrees to supply Du Pont

30 000 shares Chevrolet for $2,379 000.00 Cash
22 800 " " " 2 736 000.00 Cash or Notes

Notes to run for two years and be secured by proper collateral with 25% margin.

DU PONT will acquire 47 200 shares Chevrolet additional or the equivalent in General Motors Company common stock on basis of one share Chevrolet equals 1.2 shares General Motors Company common stock, or both, thus making Du Pont's total holdings 100 000 Chevrolet or equivalent in General Motors Company common stock, or both, which will be sold to Securities Company on same basis as Durant stock. Du Pont or Durant may sell additional stock to Securities Company on same basis, but the common stock

of the Securities Company shall be divided equally between Durant and du Pont and in order to accomplish this Durant will sell to Du Pont common stock of Securities Company in amount sufficient to even respective holdings at $165.00 per share payable $4 500 000.00 in cash and balance in the preferred stock of Securities Company at par.

The purpose of this plan is to interest Du Pont in Chevrolet-General Motors in a substantial way so that du Pont will assume responsibility for financial management of Chevrolet-General Motors affairs thus making it possible for Durant to give entire time and attention to operating end.

To this end Chevrolet-General Motors will each have Finance and Executive committees for the governing of these divisions of the activities of the companies. Durant and Du Pont shall be represented on both the Finance and Executive committees.

An appropriation system similar to that used by E. I. du Pont de Nemours & Company will be installed under which all appropriations for amounts in excess of $100 000.00 will require the approval of both the Executive and Finance committees before work can be started.

Form Motors Securities Company, under laws of Delaware, with Seven per cent Cumulative Non-Voting Preferred Stock and Common Stock.

Purchase From		Payable In Preferred	Payable In Common
W. C. Durant,	162,000 shares Chevrolet at 120,	$8,100,000.	$11,340,000.
W. C. Durant,	120,000 General Motors Corp., at 100,	8,000,000.	4,000,000.
		$16,100,000.	$15,340,000.
duPont,	100,000 Shares Chevrolet, at 120,	5,000,000.	7,000,000.
	TOTAL	$21,100,000.	$22,340,000.

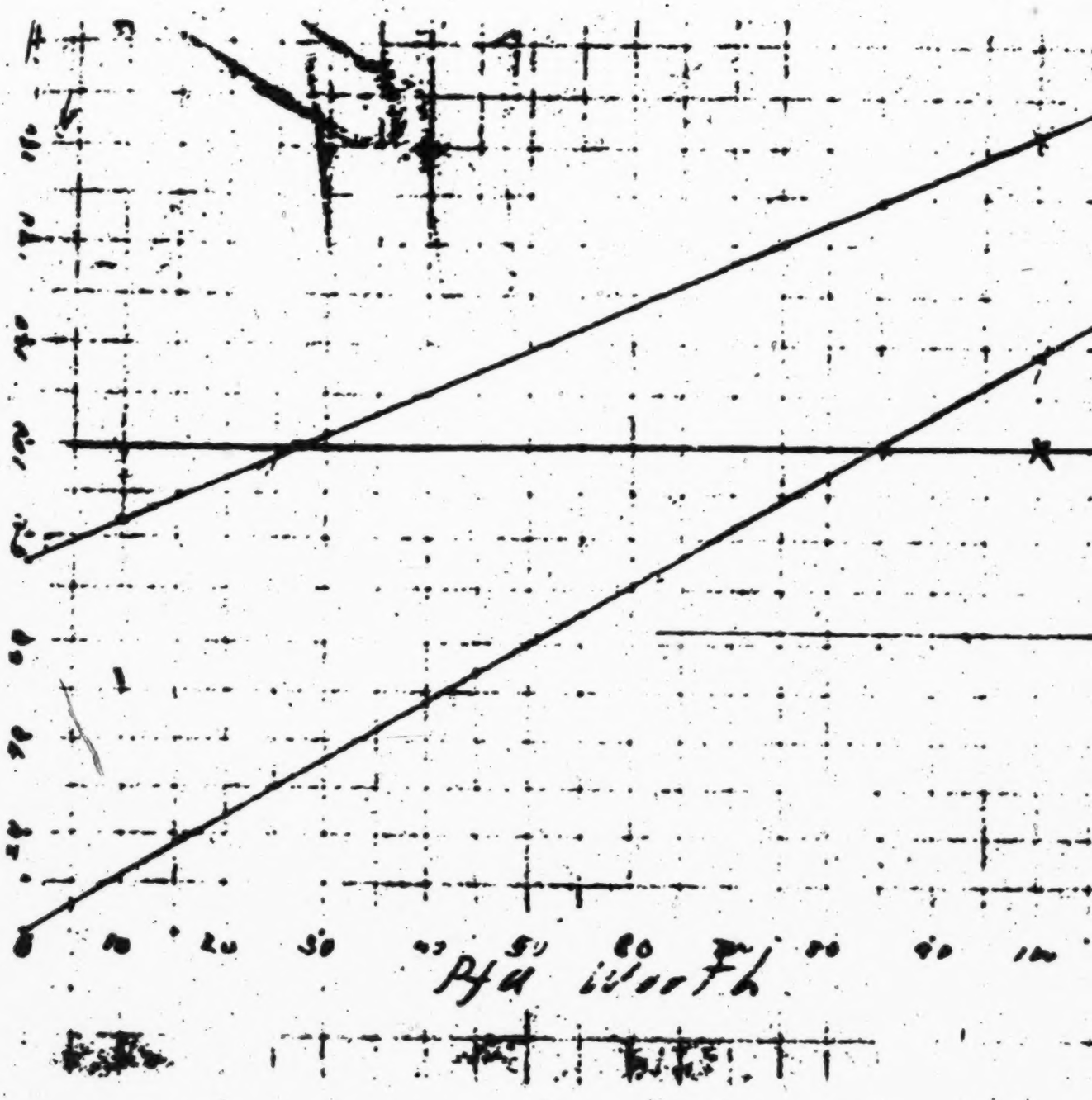
* W. C. Durant will then sell 4,170,000 shares Securities Company Common Stock to duPont for $4,500,000. Cash and $2,400,000. Motors Securities Company Preferred Stock, thus giving Durant and duPont equal ownership in common stock of Motors Securities Company, distributed as follows:

	Preferred Stock	Common Stock
W. C. Durant,	$18,500,000.	$11,170,000.
duPont,	2,600,000.	11,170,000.
TOTAL,	$21,100,000.	$22,340,000.

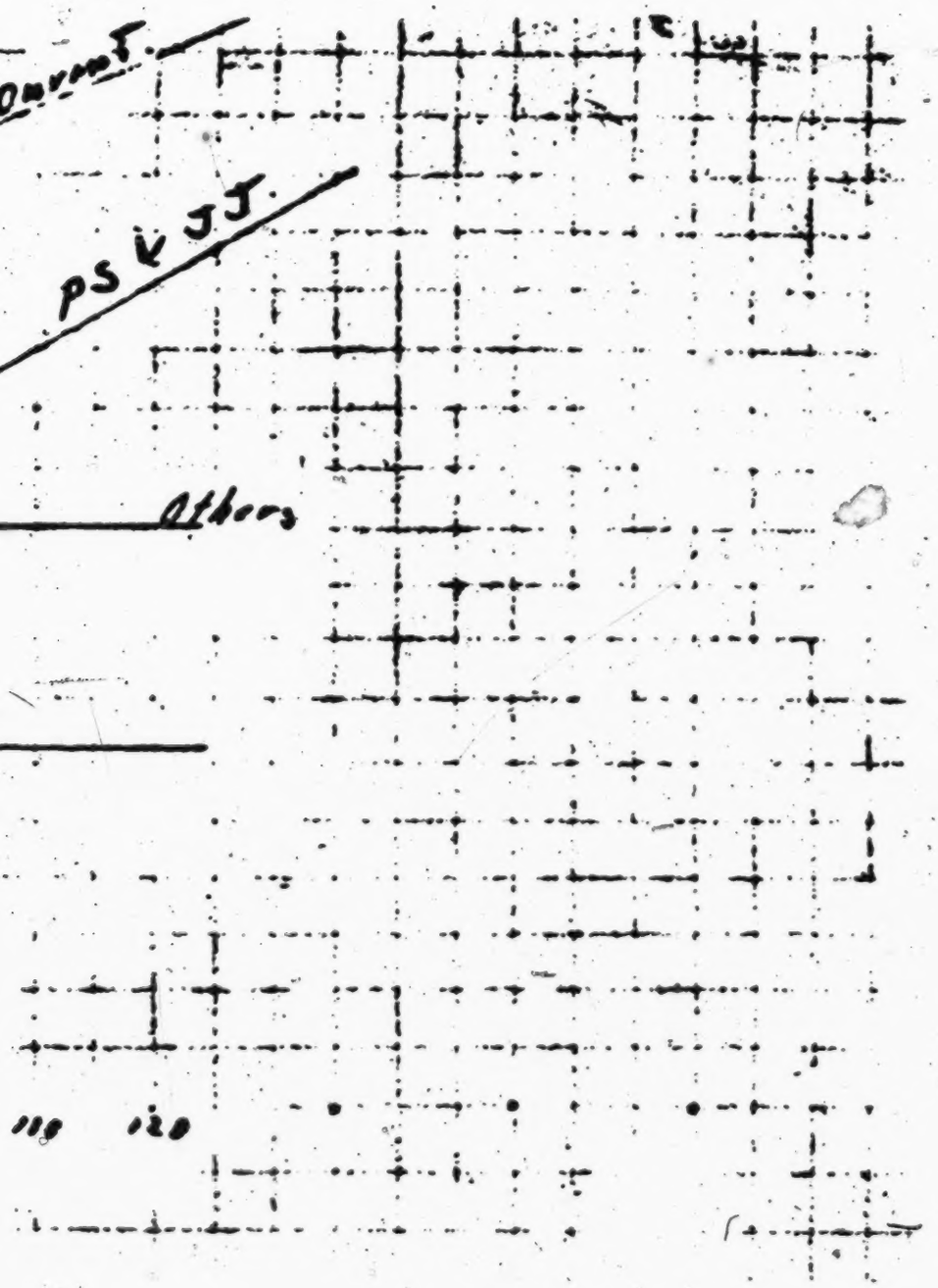
**W.C.D. would get for 59,571 shs of his 162,000 Chev*
2,978,550 Pfd & 4,170,000 Com
the latter sold as above for cash 4,500,000 2,400,000 "
5,378,550

or $75.5 cash & $90.4 pfd
Compare with PS & JJR who for 22,000 shs get $2,600,000 pfd
=$118.2 pfd & *no cash* & others who get par in cash

5606



[3329]


PS V JJ
others
110
120

MOTORS SECURITIES COMPANY

	Dividends	Earnings
382,000 shares stock at 12% Dividend, 50% earnings,	$4,584,000.	$19,100,000.
Less 7% on $21,100,000 preferred,	1,477,000.	1,477,000.
Balance for Common Stock,	$3,107,000.	$17,623,000.
Equals percent on $22,340,000 Common Stock,	13.9%	78.89%

DUPONT SECURITIES COMPANY

BUY		Cash Requirements
22,000 shares	Chevrolet from P. S. duPont and J. J. Raskob. (Pay in Motor Securities Company Preferred Stock)	0
25,200 shares	at par,	$2,520,000
30,000 "	Options,	2,379,000.
22,800 "	Options	2,736,000.
100,000 shares	TOTAL	$7,635,000.
	Buy from Durant:	
41,700 shares	Motor Securities Company Common, (and $2,400,000 Motor Securities Co., Preferred)	4,500,000.
	Total investment for du Pont Securities Co.,	$12,135,000.

duPont Securities Company Cash on Hand,		$ 103,000.	
Dividends Receivable in Cash,		823,500.	
Dividends Receivable in Liberty Bonds,		5,856,000.	
Total.		$6,782,000.	
Less:			
Notes Payable,	$100,000.		
Dividend 5%,	375,000.		
Necessary Cash Balance,	107,000.	582,000.	6,200,000.
Balance to be Financed.			$5,935,000.
Issue two year 6% Notes to sellers of 22,800 shares, included in above purchase,		$2,736,000.	
Issue additional two year 6% Notes to be sold,		3,200,000.	$5,936,000.

INCOME:

	Dividends	Earnings
11,170,000 shares Motor Securities Co., Common Stock,	$1,553,500.	$8,811,500.
Equals % on $12,135,000 Investment,	12.8%	72.6%

[redacted] W. C. Durant, Associates or Nominees.

[redacted] P. S. du Pont, Associates or Nominees.

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Durant-Du Pont agree to form Securities Company under Delaware laws with 7% cumulative non-voting preferred stock and common stock for the purpose of buying Chevrolet and General Motors Company common stocks.

Paying $80.00 in preferred stock and $70.00 in common stock for each share of Chevrolet Motor Company and $66-2/3 in preferred stock and $33-1/3 in common stock for each shares of General Motors Company

Durant agrees to sell 182 000 shares Chevrolet and 120 000 shares General Motors Company common stock to Securities Company on above basis.

Durant agrees to supply DuPont

30 000 shares Chevrolet for	$ 2 370 000.00	Cash
25 000 " " "	2 730 000.00	Cash or Notes

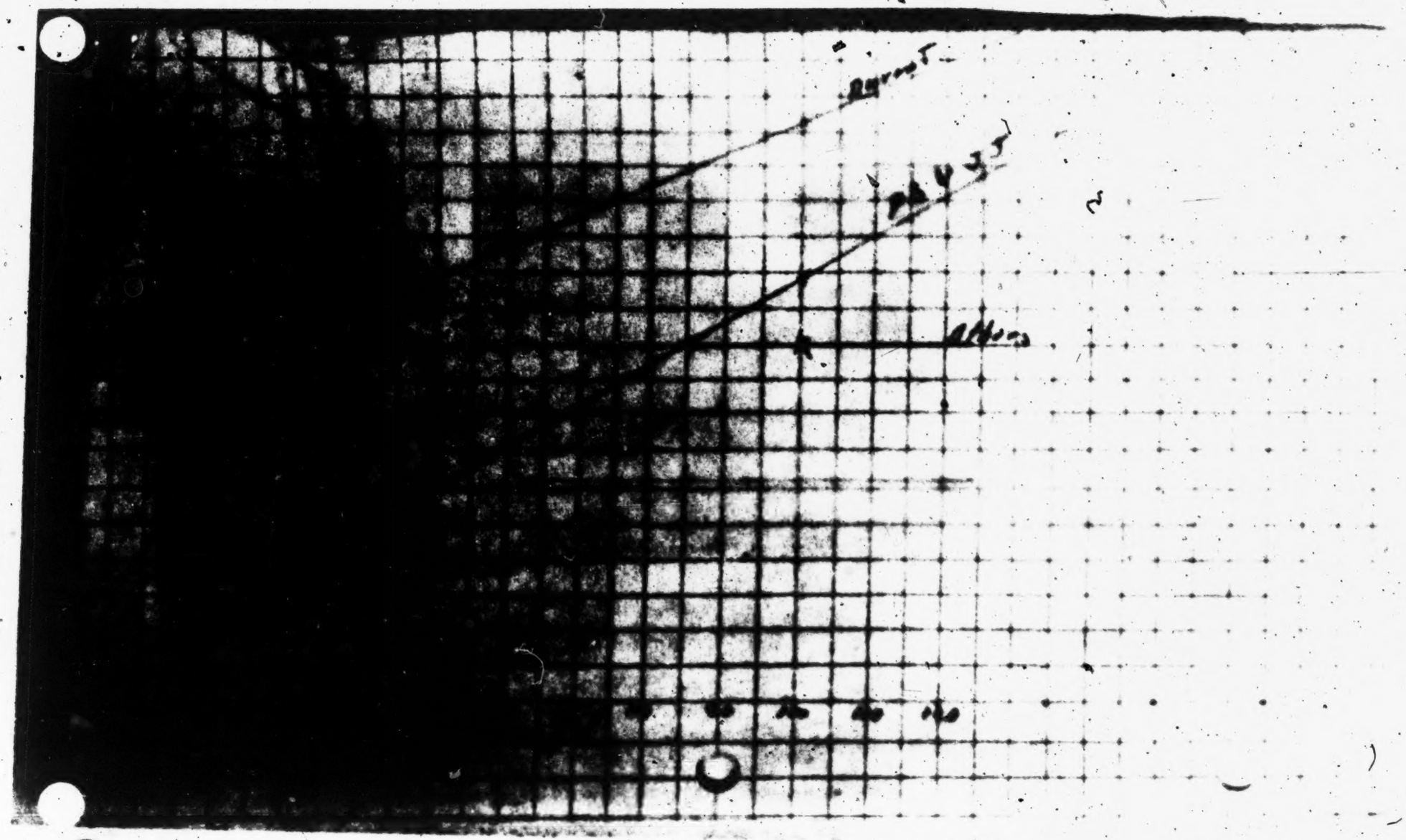
Notes to run for two years and be secured by proper collateral with [redacted] margin.

[redacted] will surrender [redacted] 000 shares Chevrolet additional or the [redacted] Company common stock on basis of one share [redacted] common stock or [redacted] of Chevrolet or [redacted] which will be [redacted] Du Pont [redacted] or some [redacted] [redacted] Du Pont [redacted]

Form Motors Securities Company, under laws of Delaware, with Seven per cent Cumulative Non-Voting Preferred Stock and Common Stock.

Exchanged From		Payable In Preferred	Payable In Common
W. C. Durant,	162,000 shares Chevrolet at 120,	$8,100,000.	$11,340,000.
W. C. Durant,	120,000 General Motors Corp., at 100,	8,000,000.	4,000,000.
		$16,100,000.	$15,340,000.
duPont,	100,000 Shares Chevrolet, at 120	5,000,000.	7,000,000.
	TOTAL,	$21,100,000.	$22,340,000.

* W. C. Durant will then sell 4,170,000 shares Securities Company Common Stock to duPont for $4,500,000. Cash and $2,400,000. Motors Securities Company Preferred Stock, thus giving Durant and duPont equal ownership in common stock of Motors Securities Company, distributed as



MUTUAL SECURITIES COMPANY

	[redacted]	[redacted]
382,000 shares stock at 12% Dividend, 50% earnings,	$4,584,000.	$19,100,000
Less 7% on $21,100,000 preferred,	1,477,000.	1,477,000.
Balance for Common Stock,	$3,107,000.	$17,623,000.
Equals percent on $22,340,000 Common Stock,	13.8%	78.80%

DUPONT SECURITIES COMPANY

			Cash Requirements
32,[illegible]		Chevrolet [illegible] Buick and J. J. Par[illegible] (Buy in Motor Securities Company [illegible] Stock)	
[illegible]		[illegible]	$2,520,000
20,[illegible]	"	Options,	1,375,000.
22,500	"	Option	2,736,000.
[illegible]		Total	$7,631,000.

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Buy from Durant

41,[illegible] shares Motor Securities Company [illegible] on, (and 10,[illegible] Motor Securities Co., Preferred)

Total Investment Dupont Securities Co., [illegible]

Dupont Securities Company [illegible]	$ 103,000.
Dividends Receivable in Cash,	273,500.
Dividends Receivable in Liberty [illegible]	3,106,000.
Total	$3,782,500.

[redacted]

3332

* W. C. Durant will then sell 4,170,000 shares Securities Company Common Stock to duPont for $4,500,000. Cash and $2,400,000. Motors Securities Company Preferred Stock, thus giving Durant and duPont equal ownership in common stock of Motors Securities Company, distributed as follows:

	Preferred Stock	Common Stock
	$10,500,000.	$11,170,000.
	1,800,000.	11,170,000.
	$12,100,000.	$22,340,000.

3333

3135

Dividends Receivable in Cash,			$73,500.
Dividends Receivable in Liberty Bonds,			5,196,000.
Total			$5,782,000.
Less:			
Notes Payable,	$100,000.		
Dividend 5%,	375,000.		
Necessary Cash Balance,	107,000.	$582,000.	6,200,000.
Balance to be Financed,			$5,935,000.

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Issue two year 6% Notes to sellers of 22,800 shares, included in above purchase,		$2,736,000.
Issue additional two year 6% Notes to be sold,	3,200,000.	$5,936,000.

INCOME:

	Dividends	Earnings
11,170,000 shares Motor Securities Co., Common Stock,	$1,563,800.	$8,811,800
Equals % on $13,135,000 Investment,	12.8%	72.8%

COPY OF MINUTES OF MEETING #84 of the FINANCE COMMITTEE,

E. I. duPONT deNEMOURS & COMPANY,

HELD IN WILMINGTON, DELAWARE, ON DECEMBER 20, 1917.

* * * * * * *

E. I. duPONT deNEMOURS & COMPANY
FINANCE COMMITTEE.

Meeting #84 (Special Meeting) held at the office of the Company, Wilmington, Delaware, 9:00 a.m., Dec. 20, 1917.

PRESENT: P. S. duPont, in the Chair,
Irenee duPont,
H. F. duPont,
H. M. Barksdale,
J. J. Raskob.

GENERAL MOTORS-CHEVROLET
MOTOR STOCK INVESTMENT:

Report was received from the Treasurer, dated December 19, 1917 (#9849) on the above-mentioned subject, and same was read to the Committee by the Secretary. The matter was discussed until 10:30 a.m., at which time the Committee adjourned to join the Executive Committee in a joint discussion of this matter.

2.

TIME: 1 hr. 30 mins.

/s/ P. S. duPont

/s/ Irenee duPont

/s/ M. D. Fisher
Secretary

/s/ J. J. Raskob

APPROVED AS TO LEGALITY:

/s/ H. M. Barksdale

/s/ H. F. duPont

/s/ J. P. Laffey

I hereby certify that the foregoing is a true copy of minutes of meeting #84 of the Finance Committee, E. I. duPont deNemours & Company, held in Wilmington, Delaware on December 20, 1917.

/s/ *F G Hess*
SEC'Y, FINANCE COMMITTEE
E. I. DUPONT DENEMOURS & COMPANY

April 30, 1951

[CORPORATE SEAL]

Defendant's Exhibit (DP) No. 47.

MINUTES OF SPECIAL MEETING OF THE BOARD OF DIRECTORS OF THE E. I. DU PONT DE NEMOURS & COMPANY, HELD AT THE OFFICE OF THE COMPANY, WILMINGTON, DELAWARE, ON FRIDAY, DECEMBER 21ST, 1917, AT ELEVEN:FIFTEEN O'CLOCK A.M.

Present: Mr. P. S. du Pont, in the Chair;
Mr. Irenée duPont,
Mr. H. F. Brown,
Mr. F. G. Tallman,
Mr. H. F. du Pont,
Mr. Wm. Coyne,
Mr. J. P. Laffey,
Mr. H. M. Barksdale,
Mr. Lammot duPont,
Mr. R. R. M. Carpenter,
Mr. J. J. Raskob,
Mr. A. Felix du Pont,
Mr. H. G. Haskell,
Mr. J. A. Haskell,
Mr. C. L. Patterson,
Mr. Eugene duPont,
Mr. H. M. Pierce,
Dr. C. L. Reese,
Mr. Eugene E. duPont,
Mr. Alexis I. duPont,
Mr. E. G. Buckner.

The President orally advised that this meeting was called for the purpose of considering the question of this Company making an investment in the Common Stocks of the Chevrolet and General Motors Companies. He stated

that this matter had been given consideration by the members of the Executive and Finance Committees, but no definite action on the subject had been taken by said Committees. He presented a report on the subject from the Treasurer to the Finance Committee, dated December 19, 1917, which was read by the Secretary. The matter was discussed until 1:40 p.m., at which time the Board adjourned until 3:00 p.m., it being understood that a further joint meeting of the Executive and Finance Committees would be held in the meantime for the purpose of taking some action.

The Board reconvened at 3:00 p.m., the same members being present as at the morning session. The President orally advised that at a joint meeting of the Executive and Finance Committees just held the following resolution was offered and unanimously adopted:

—2—

RESOLVED, that the President and Treasurer of this Company be and they are hereby authorized to purchase up to Twenty-five Million Dollars ($25,000,000.00) worth of the Common Stocks of the Chevrolet and General Motors Companies, paying for these stocks an average price not to exceed Ninety-five Dollars ($95.00) per share, and in the calculation considering Chevrolet stock equivalent to 1.2 shares of General Motors Company stock;

BE IT FURTHER RESOLVED, that they be and are hereby authorized to do all acts and things necessary to finance and carry out this purchase in accordance with recommendations contained in the Treasurer's report to the Finance Committee, dated December 19, 1917, modified as follows:—

"While it doubtless will be necessary for the duPont Company to do a good deal in the way of temporary financ-

ing, my recommendation is that we incorporate a new company with an authorized capital of $75,000,000.00, $50,000,000.00 of which shall be Class 'A' stock and $25,000,000.00 Class 'B' stock;

"Class 'A' stock to be a 12% cumulative non-voting stock, callable at any time in the discretion of the Board of Directors at $150.00 per share plus accrued and unpaid dividends;

"Class 'B' stock to be stock with sole voting power and entitled to all earnings of the Company after the payment of the 12% dividend on Class 'A' stock;

"The duPont Company to subscribe immediately to $7,000,000.00 Class 'B' stock at par payable in cash, in consideration of which the new company will allow us to make the following offer to the common stockholders of the duPont Company, to-wit:—

"The Common Stockholders of the duPont Company will be entitled to subscribe to an amount of the new Company Class 'A' stock at par equal to thirty per cent. (30%) of their present holdings of E. I. duPont de Nemours & Company Common Stock, payable either in cash or Liberty Bonds at par and accrued interest. Payments may be made in full at the time of subscription, or may be made in four installments of 7-1/2% each, payable on the 20th days of March, June, September and December, 1918, respectively. Stock will not be issued until fully paid, but interest at the rate of six per cent. (6%) per annum will be paid on installments."

After full discussion of the above matter, the following resolution was offered and adopted (Messrs. E. G. Buckner,

A. Felix duPont and Eugene E. duPont voting in the negative) :—

"RESOLVED, that the action taken by the Executive and Finance Committees of this Company in connection with the purchase of General Motors-Chevrolet Motor Stocks be and the same is hereby approved, ratified and confirmed."

There being no further business before the Board, on motion the meeting was adjourned.

(Sgd.) Alexis I. duPont
Secretary.

O.K. form
J.P.L.

I hereby certify that the foregoing is a true and correct copy of Minutes of meeting of the Board of Directors of E. I. du Pont de Nemours & Company held on December 21st, 1917.

Wilmington, Delaware
Dated *4-27-51*

/s/ *E. L. Zilpin*
Assistant Secretary

(SEAL)

January 17th, 1918.

TO : FINANCE COMMITTEE
FROM : TREASURER

GENERAL MOTORS—CHEVROLET MOTOR STOCK INVESTMENT

We have purchased and paid for a total of 77,600 shares of General Motors Company common stock and 121,440 shares of Chevrolet Motor Company stock being the equivalent of 223,328 shares at an average cost of $94.75 per share, which has been paid for as follows:

Cash	$11,523,473.69
Liberty Bonds at par	7,240,000.00
Notes of General Industries, Inc., dated January 8th, 1918, maturing September 1st, carrying General Motors Company stock valued at $70.00 as collateral	3,000,000.00
a total of	$21,763,473.69
from which should be deducted the 3% dividend due February 1st	597,120.00
making the net cost	$21,166,353.69
Should we make an additional deduction of the three points on the $7,240,000.00 Liberty Bonds, representing decrease in the value to the amount of	217,200.00
it makes the net cost	$20,949,153.69

or an average of $93.80 per share.

Since my report of December 19th our cash position has been materially altered through having made arrange-

C59

ments with the Ordnance and Navy Departments of the United States Government whereby our contracts with them have been modified to provide an advance payment in cash equal to 25% of the value of the contract in lieu of advances equal to 80% of the cost of materials assembled at our plants provided for in the original contracts. This places us in position to finance the materials, etc. necessary for the manufacture of powder called for by these contracts and releases a corresponding amount of our own capital which would otherwise have been diverted to this purpose. Under this arrangement we have received approximately $20,000,000.00 in cash during the past few days and will receive

$12,000,000.00 additional before the 25th instant. In view of the release of cash due to this transaction it becomes necessary to revise the elaborate cash forecast contained in my report to your Committee under date of November 19th, which results as follows:

The estimated cash and investment notes on hand January 31, 1918, as shown in that report, is	$62,800,000.00
from which should be deducted the special dividend of 32% paid December 22, 1917,	18,800,000.00
leaving a balance of	$44,000,000.00
The cash advance payments receivable from the Government during January, as hereinbefore recited, aggregate	32,000,000.00
making a total of	$76,000,000.00
If we deduct from this the amount we are authorized to invest in the motor industry	25,000,000.00

we have a balance of $51,000,000.00
of which the amount invested in investment
notes, etc., is 25,400,000.00

leaving our cash balance after paying for
our motor securities $25,600,000.00

Making similar corrections over the balance of the year, the corrected figures show as follows;

	Cash	Investment Notes	Cash and Investment Notes
January 31st	$25,600,000.	$25,400,000.	$51,000,000.
February 28th	21,400,000.	25,400,000.	46,800,000.
March 31st	41,700,000.	1,800,000.	43,500,000.
April 30th	38,400,000.	1,800,000.	40,200,000.
May 31st	43,400,000.	1,800,000.	45,200,000.
June 30th	21,100,000.	1,800,000.	22,900,000.
July 31st	26,000,000.	1,800,000.	27,800,000.
August 31st	29,400,000.	1,800,000.	31,200,000.
September 30th	32,400,000.	1,800,000.	34,200,000.
October 31st	37,200,000.	1,800,000.	39,000,000.
November 30th	43,900,000.	1,800,000.	45,700,000.
December 31st	47,100,000.	1,800,000.	48,900,000.

In view of this showing I strongly recommend that we do not at this time make an offering of the Class A stock of General Industries, Inc. as outlined in my report of December 19th. It would be a mistake to resort to such an extravagant method of financing this purchase unless the necessity were such as to make it seem advisable, and our present necessities are not such as to warrant any such action. It must,

also, be remembered that by keeping this total investment for the Company it results in our having $3,000,000.00 dividend from the motor industry to add to our net earnings and this is equivalent to approximately 5% on our

common stock, which will be very helpful in maintaining the du Pont dividend.

In lieu of the plan outlined, I would recommend the following:

1st. The du Pont Company to subscribe to $25,000,000.00 par value of General Industries, Inc. (this name to be changed as soon as possible to du Pont American Industries, Inc.).

2nd. General Industries, Inc. to make a call of 5% on this subscription, under which the du Pont Company would pay 5% of $25,000,000.00 or $1,250,000.00.

3rd. The du Pont Company to sell to General Industries, Inc., $25,000,000.00 motor securities, receiving in payment $1,000,000.00 in cash and $24,000,000.00 in note (one year with privilege of renewal for one year) of General Industries, Inc., which note will carry all the motor stocks as collateral.

4th. The du Pont Company will take this note and pledge, say, $18,000,000.00 of U. S. Treasury Certificates, Liberty Bonds or other U. S. obligations as additional collateral and sell it, thus securing $24,000,000.00 additional cash with which to pay for U. S. Government obligations. The sale of this $24,000,000.00 note should not be difficult for the reason that approximately $6,000,000.00 can perhaps be sold to du Pont Securities Company in payment for Liberty Bonds purchased from them, $3,000,000.00 to Messrs. Durant and Hofheimer in payment for motor securities purchased from them, leaving a balance of $15,000,000.00 to be sold to our banks or otherwise disposed of.

There should be no difficulty in disposing of these notes

in which it appeared that, we representing the duPont interest, were willing to help materially in this very desperate situation. Mr. Morrow stated that he thought the plan impossible of execution because of the very critical condition in the market and recommended that we endeavor to place a loan of $20,000,000. among the banks, in order that an offer of cash for all Mr. Durant's indebtedness might be made. Mr. Raskob and I agreed on part of the duPont interests that we could furnish $7,000,000., and sufficient additional collateral toward the project. The Morgan partners were very complimentary as to the willingness of duPont to help in the situation, Mr. Cochran using the expression that "there are two firms in this country who are real sports, viz., duPont and Morgan."

Discussion ensued as to the treatment of Mr. Durant, Mr. Morrow making the suggestion that one-fourth of the equity in the shares should remain with Durant and that some portion of this equity might have to be used in order to help place the notes. He stated in the beginning that Morgan & Company

would ask no commission or payment of any kind for their services in the deal. This division of the equity was discussed with careful consideration of justice to Mr. Durant and those carrying the load. After this preliminary discussion, the Morgan partners stated that they must go as carefully as possible into Mr. Durant's accounts before any attempt was made to float a loan. This investigation they proposed to start upon immediately and, therefore, went to Mr. Durant's room, and checking of the accounts was carried forward and the proposition of relief presented to Mr. Durant by Mr. Morrow. Mr. Durant thought that

one-fourth of the equity returned to him was harsh. Mr. Morrow then moved to one-third. Mr. Durant suggested to me that 40% to him and 60% to the duPont interests would be more nearly fair. This part of the negotiations was all in good spirit and with apparent endeavor on all sides to be just in a difficult situation. Checking of accounts and discussion of the subject continued without interruption until about 5:30 o'clock Friday morning, about which time Mr. Durant and I signed a memorandum, agreeing to the general proposition of a $20,000,000. note issue and issue of stock to support the $7,000,000. furnished by the duPont interests; also, the loan of additional collateral, estimated at 1,300,000 shares. Memorandum also agreed that the equity in the stock representing the selling price above $9.50 per share, plus costs and interest, should be divided one-third to Durant and two-thirds to duPont. Even at this date the total indebtedness was uncertain and the syndicate accounts still involved.

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After a hurried breakfast we all retired for a couple hours' sleep and returned to business at nine to 9:30 o'clock that morning. Messrs. Morgan & Co. arranged a loan of $20,000,000. with the principal banks in New York before

(Nov. 19th)

five o'clock that evening. In the meantime, the plan was suggested that the duPont interests take 8% Preferred stock for their cash, and for the loan of collateral, 80% of the Common stock, the latter representing the equity in the selling price of the stock above $9.50, plus costs and interest. Twenty per cent. of this common stock was set aside for the bank interests furnishing the loan of $20,000,000.

On that day the duPont Finance Committee met and agreed to divide the 80% Common stock equally with Mr. Durant, leaving the proportions 40% Durant, 40% duPont and 20% bankers. This is the plan that has been finally consummated. While rumors of the deal were active on (Nov. 20th) Saturday,/ announcement was not made until Monday,/ (Nov. 22nd) when Morgan & Company started to gather in the stock. Throughout the whole transaction the Morgan partners have appeared to greatest advantage. They threw themselves into the situation wholeheartedly, stating at the start that they asked no compensation. They have acted with remarkable speed and success, the whole deal involving $60,000,000. or more, having been planned and practically completed in less than four days, in which are included a Saturday and Sunday.

Very truly yours,

17 /s/ PIERRE DU PONT

NOTE. P. S. DuPont is stamped across each page of above letter.

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Defendant's Exhibit (DP) No. 51

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GENERAL MOTORS CORPORATION

BANK LOANS OUTSTANDING

End of Month	1920	1921	1922
	$	$	$
January	20,605,566	74,160,253	45,083,097
February	30,786,246	73,226,347	48,895,573
March	49,004,530	74,845,807	41,577,049
April	56,300,122	74,324,536	37,908,524
May	67,926,932	71,750,346	19,605,000
June	78,257,898	68,808,250	-
July	78,753,047	65,252,049	-
August	78,292,806	63,870,965	-
September	79,416,261	61,360,399	-
October	82,784,824	60,420,947	-
November	80,699,748	57,810,044	-
December	72,421,451	48,974,996	-

W.C.D. to sell to a new corporation to be formed by P.S.du P. 2,700,000 shares General Motors Co. common stock at $9½ per share.

It is contemplated that such new corporation shall issue $20,000,000 one year notes and ~~that P.S.du~~ P. and associates shall (1) furnish $7,000,000 in cash in return for the stock of said corporation and (2) loan or otherwise transfer to said corporation common stock of G.M.Co. to an amount sufficient to enable the said $20,000,000 of notes to be collateraled by 4,000,000 shares of G.M.Co. common stock.

P.S.du P. and associates shall name the directors and officers of said corporation, who shall sell all the G.M.Co. common stock at their discretion and retire said notes and stock. After all of said notes have been retired and also all of said $7,000,000 has been returned with interest thereon at the same rate as the notes bear and all expenses have been paid, the remainder, if any, shall be considered profits and divided ⅔ to P.S.du P. and associates and ⅓ to W.C.D. Such share of the profits, if any, required to be used as a bonus with the sale of the notes shall reduce proportionately the share of profits of P.S.du P. and W.C.D.

The conditions discussed with reference to the other stock of W.C.D. are to be met by him.

W.C.D. agrees to foregoing in consideration of P.S.du P. securing him a loan of $530,000. on Nov. 19th.

P.S.du P. agrees to use his best efforts to put through foregoing plan.

O.K. Nov. 19, 1920.
W.C.D. " " "
P.S.du P. " " "

E. I. DUPONT DE NEMOURS & CO.

FINANCE COMMITTEE

Minutes of meeting held at the office of General Motors Corporation, #224 West 57th Street, New York City, November 19th, 1920:

PRESENT: P. S. duPont, Chairman,
Irenee duPont,
Lammot duPont,
J. J. Raskob,
R. R. M. Carpenter,
H. F. Brown,
Wm. Coyne,
F. G. Tallman,
F. D. Brown.

The following minutes of the meeting of the Executive Committee of the duPont American Industries were presented to the meeting:

"The Chairman presented the following plan for consideration of the Finance Committee:

'It is proposed to organize a corporation for the purpose of purchasing approximately 2,700,000 shares of General Motors Corporation common stock at $9.50 per share. For the purpose of financing this purchase, the company is to be authorized to issue $20,000,000. one year notes, bearing 8% interest, and to sell stock to the amount of $7,000,000. The proceeds of the sale of these securities, $27,000,000., is estimated sufficient to make the stock purchase. The company also proposes

to borrow or to purchase and pay for in common stock approximately 1,300,000 shares of General Motors Corporation common stock, making a total of 4,000,000 shares to be used as collateral on the above mentioned $20,000,000. notes. It is recommended that this company authorize its officers to subscribe to $4,000,000. of the above mentioned common stock and to loan the proposed new company 750,000 shares of General Motors Corporation common stock to be used as collateral in accordance with the plan. As it is the purpose of this company to resell all or part of the stock purchased, it is recommended that the officers of the company assent to the use of 20% of the profits resulting from the sale of stock to assist in the placing of the notes of the proposed company, and agree to divide equally the remaining 80% of the profit between those from whom the common stock is purchased and the common stockholders of the proposed company.

After a full discussion, the above recommendations were approved and the officers of the company authorized to assist in the carrying out of the plan.'"

After discussion, it was resolved that the Finance Committee approve the action of the Executive Committee of the duPont American Industries and recommend that the plans outlined be carried out.

Upon motion duly made and seconded the following resolution was unanimously adopted:—

WHEREAS, it appears necessary to use $780,000. on account of the purchase of General Motors Corporation common stock before the actual consummation of the

plan above outlined; J. P. Morgan & Company being willing to furnish $265,000. and to advance for account of E. I. duPont de Nemours & Company an additional $265,000. which, together with $250,000. otherwise obtained, will be sufficient to accomplish the results desired;

RESOLVED, that the use of $265,000. as and for the purpose above stated be approved.

Defendant's Exhibit (DP) No. 54 5644

E. I. DU PONT DE NEMOURS & COMPANY
(INCORPORATED)

March 28, 1921.

Mr. P. S. duPont, President,
General Motors Corporation,
New York City.

Copy to Mr. J.J.Raskob, V.P.

I am enclosing enclosing herewith copy of the proposition submitted by Mr. Raskob to the Board of Directors at today's meeting together with copy of the resolution which which was unanimously adopted. / *last page*

[STAMP] M. D. FISHER.
Asst. Secretary.

ENCL.

NOTE: Italics indicate handwriting. "Return to Executive Committee Room 9069" is stamped at bottom and "F-402" is written at top. "gmc-897 l" appears in lower right corner.

J-36

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Vice President J J Raskob

~~The President~~ called attention to the statement contained in ~~his~~ *the* Annual Report to the Stockholders to the effect that plans were under consideration for permanently financing the purchase from Mr. W. C. Durant by du Pont Securities Company of shares of the General Motors Corporation, and stated that various plans had been discussed.

He stated that in addition to the indebtedness of the duPont Securities Company it appeared desirable to consider also the indebtedness of the Chevrolet Company, approximately sixty per cent of the shares of which are owned by the E. I. duPont de Nemours & Company through the duPont American Industries Company. He also stated that the Canadian Explosives Company, Ltd. Forty five per cent of the common stock of which is owned by your Company through the DuPont American Industries Company, was indebted to the General Motors Corporation in the sum of approximately $8,000,000.00, and that he recommended that consideration be given some plan by which this indebtedness could be discharged. He stated that two plans of dealing with the situation had been prepared, and he submitted them as follows:

PLAN NO. 1

1st. Du Pont American Industries will be wound up, with a distribution of its assets to E. I. du Pont de Nemours & Company in final liquidation.

2d. A new company to be known as E. I. du Pont de Nemours Manufacturing Company will be incorporated under the laws of such state as may be selected as being most advantageous, with charter provisions similar to those of the present E. I. du Pont de Nemours and Company, and with appropriate authorized capital divided into:

6% Debenture Stock of $100 per value per share—
and Common Stock of $100 par value per share.

3d. E. I. du Pont de Nemours Manufacturing Company will buy all of the business and assets, except stock of General Motors Corporation directly or indirectly represented, now or at the time of consummation, owned by E. I. du Pont de Nemours & Company, paying therefor in securities, and assuming all current liabilities. The payment will be as follows:

$56,503,240 Par Value of 6% Debenture Stock —
$63,378,335 Par Value of Common Stock.

4th. E. I. du Pont de Nemours & Company will thus be thrown into the position of a holding company with assets and liabilities as follows, on the basis of values as of December 31, 1920.

STATEMENT "A"

ASSETS:

6% Debenture Stock E. I. du Pont de Nemours Manufacturing Co.—Par Value	$56,503,240.
Common Stock E. I. du Pont de Nemours Manufacturing Co.—Par Value	63,378,335.
Excess Net Asset Value of Latter	39 272,936.
General Motors Stock, directly or indirectly owned, at cost	50,124,419*
	$209,278,930.

LIABILITIES:

6% Debenture Stock	70,629,050.
Common Stock	63,378,335.
Surplus	75,270,545.
	$209,278,930.

* This represents the Investment Cost at December 31, 1920.

5th. The holders of Debenture Stock of E. I. de Nemours and Company will be given the opportunity to convert 80% of the stock held into the 6% Debenture Stock of E. I. du Pont de Nemours Manufacturing Company, with the desired result that $50,503,240 Par Value of Debenture Stock of the holding company will thus be redeemed and cancelled, having $14,125,810 remaining in the hands of the public.

for the reason that the notes would be gilt edged in every respect and be secured as follows:

1st. by subscription of du Pont Company for $35,000,000. stock;

2nd. by $25,000,000. of motor securities;

—3—

3rd. by $18,000,000.00 of U. S. Government obligations.

The net cost of doing this will be a profit to us; we gain the prestige of subscribing to a very substantial additional amount of Liberty Bonds; we will have the advantage of offering the banks an investment which will be very attractive to them and incidentally an opportunity to introduce motor securities in a substantial way in the banking field, which the writer feels is bound to be of benefit to us in the future, through having the motor securities well and favorably known to the banking community and particularly to our bankers.

J. J. Raskob.

P.S.—As a matter of record I should like to report that the General Industries, Inc. has been incorporated under the laws of the State of Delaware with an authorized capital of $25,000,000.00 consisting of 250,000 shares of common stock, par value $100.00 each. E. I. du Pont de Nemours & Company is sole stockholder and the officers and directors are as follows:

President:	P. S. du Pont
Vice President:	H. M. Barksdale
" "	Irenee du Pont
" "	H. F. du Pont
Treasure	J. J. Raskob

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Secretary	Alexis I. du Pont
Directors	P. S. du Pont
	H. M. Barksdale
	Irenee du Pont
	H. F. du Pont
	J. J. Raskob

NOTE: Gmc 910a appears in the lower right hand corner of each page.

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EXCERPT FROM MINUTES OF JOINT MEETING OF EXECUTIVE COMMITTEE #188 & FINANCE COMMITTEE #91, E. I. DUPONT DENEMOURS & COMPANY, HELD IN WILMINGTON, DELAWARE, JANUARY 21, 1918.

* * * * *

GENERAL MOTORS - CHEVROLET MOTOR STOCK INVESTMENT:

Report from the Treasurer, dated January 17, 1918, on the above-mentioned subject, was presented for consideration. After full discussion, the following resolution was offered and unanimously adopted:—

WHEREAS, at a joint meeting of the Executive and Finance Committees of this Company held on December 21, 1917 the President and Treasurer were authorized to make an investment of $25,000,000.00 in the stocks of the Chevrolet and General Motors Companies along lines more fully stated in said authorization; and

WHEREAS, under date of January 17, 1918 the Treasurer recommended a change in the method of financing the purchase of these stocks; and

WHEREAS, at a meeting of the Finance Committee held on January 9, 1918 the average price authorized to be paid for these stocks was increased from $95.00 per share to $100.00 per share;

RESOLVED, that the plan of financing this purchase as outlined in said Treasurer's report of January 17, 1918 be and the same is hereby approved;

RESOLVED, that the action of the President and Treasurer of this Company in causing the General In-

dustries, Inc. to be incorporated under the laws of the State of Delaware, with an authorized capital of $25,000,000.00 divided into 250,000 shares of the par value of $100.00 each, be approved;

RESOLVED, that this Company do subscribe to $25,000,000.00 par value of General Industries, Inc. stock, five per cent. (5%) of which subscription is to be paid immediately and the balance when called by the Board of Directors of General Industries, Inc.;

RESOLVED, that the Secretary be requested to immediately forward to the Directors of this Company a copy of this resolution, together with a copy of resolution of the Finance Committee of January 9, 1918, together with a copy of the Treasurer's report of January 17, 1918, advising the Directors that they will be asked to approve, ratify and confirm the action of this joint meeting at the next regular meeting of the Board to be held on Wednesday, January 30, 1918.

****

I hereby certify that the foregoing is a true excerpt from minutes of joint meeting of Executive Committee #188 and Finance Committee #91, E. I. duPont deNemours & Company, held in Wilmington, Delaware, on January 21, 1918.

F. G. HESS (Stamp)
SEC'Y, EXECUTIVE COMMITTEE
E. I. DUPONT DE NEMOURS & COMPANY

December 20, 1948

Defendant's Exhibit (DP) No. 50

November 26th, 1920.

Mr. Irenee duPont, President,
E. I. duPont deNemours & Co.,
Wilmington, Delaware.

Dear Sir:

Recent developments in General Motors Corporation's affairs make it necessary to record developments of the past two weeks, which I do from notes made by me and from circumstances that are still clearly in mind. Before dealing with this part of the history I should like to record a few words in regard to my previous understanding of Mr. Durant's personal affairs.

Since my first acquaintance with Mr. Durant some years ago he had never up to Thursday, November 11th, 1920, said anything to me concerning his personal affairs. When the duPont interests bought into the General Motors Company and acquired an investment of $25,000,000. worth of stock at slightly above par, it was understood from Mr. Durant that he, possibly together with his immediate family, held a similar amount of stock (including his holdings in the Chevrolet Company, which was then, as now, a holding company of General Motors Common stock). It was known to us at that time that the larger part of Mr. Durant's stock stood in the name of brokers, but this was supposed to be a matter of convenience. I am quite sure that if Mr. Durant was a borrower on

this stock at the time, nothing was said about it. During the months that followed our acquisition of stock up to last spring I knew at times that Mr. Durant had permitted his stock to be lent in the street. I also knew that he was at times purchaser of stock, both directly and through advising people to buy. I had never supposed that he purchased other than by payment outright or in amount within his ability to carry, in view of his seemingly large fortune. I do not remember his mentioning any case in which he was a seller of stock, nor does it appear now that he has ever been other than a purchaser. I have never abetted Mr. Durant in any thoughts of stock and market control which he mentioned to me; in fact, what little has been said would tend to discourage market operations rather than to encourage them; but, as I said before, Mr. Durant has never spoken to me about personal affairs and it has never appeared that the stock operations were anything but personal. I have a strong impression, which Mr. Raskob confirms, that Mr. Durant was entirely out of the stock market in the spring of 1920. I have supposed that he owed no money, particulrly on brokers' accounts. When syndicates were formed in recent months by Morgan & Company, it was my understanding that Mr. Durant would not operate in the stock market in any way, as it is impossible for two parties to act independently in a satisfactory way. I have been disappointed during recent weeks to hear Mr. Durant mention supporting the market, in view of

the fact that the Morgan syndicate was not doing so properly. My judgment has been against this independent

action, but I am not sure that the subject has been discussed in a way that has indicated to Mr. Durant any clearcut ideas on my part; in fact, I have pictured his purchases to sustain the market as being limited to a number of shares well within his supposed purchasing power and that of his immediate friends who might be helping him in placing the stock. I have felt quite certain up to November 11th that Mr. Durant was not operating in the stock market and was not a borrower of money.

Notwithstanding the above opinions that were quite firmly fixed in my mind, there have been rumors of Durant's speculations. Both Mr. Raskob and I have felt that Morgan & Company have been ignorant of the extent of Mr. Durant's operations since they became purchasers of General Motors Common stock. Morgan & Company have had every opportunity to question Mr. Durant on the subject and I have not felt it my duty to pry into Durant's affairs. Some time within the past six weeks Mr. Morrow of Morgan & Company asked Mr. Raskob and me some questions regarding Mr. Durant's personal affairs, particularly as to his possible stock market operations. To this we replied that we knew nothing of his personal affairs and that he had never confided in us. I advised Mr. Morrow that he question Mr. Durant personally, as we felt sure that he would be candid in his answers. This led to a meeting in Mr. Morrow's office in November, 1920

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at which he, Mr. Durant, Mr. Raskob and I were present. During that meeting I stated that it was fair that the partners in ownership of General Motors stock should know each others position and informed the meet-

ing on the part of the duPont interests that all of our stock, both General Motors and Chevrolet, was held by the company, unpledged, and that we were not buyers or sellers of stock in any amount. I also stated that I, personally, was not a borrower of money on the stock; that my shares were held by me, and that I had not bought or sold stock recently. I stated that so far as I knew, none of the individuals in the duPont group were borrowers on General Motors stock or operating in any way. Mr. Morrow stated that the shares purchased by Morgan & Company and their friends were still held and that there was no intention to sell. I do not remember that Mr. Durant made as positive a statement on his part, but he did not give any intimation that he was a borrower on the stock or operating in the market in any way. Mr. Morrow asked him the direct question whether he knew of any weak accounts in the market, to which Durant replied "no". He left us with the impression that his holdings were as clear as our own. Knowing Mr. Durant and the peculiarities of his makeup, I do not think that he intended to deceive us in any way; but Mr. Morrow, who was not inclined to be as generous, I think censures Mr. Durant severely for his failure to be frank with us.

We now come to Thursday, November 11th, 1920. Without any idea in the heads of Mr. Raskob or the writer that

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Mr. Durant was involved in any way, on the date above mentioned Mr. Durant asked us to lunch with him. At the meeting he stated that he had been informed that "the bankers" had demanded his resignation as President of the

to
General Motors Company,/ which demand he was ready to accede, as he was determined to "play the game", for the reason that the company as well as he, personally, "was in the hands of the bankers" and must act accordingly. I immediately took exception to his statement about the company, explaining that our borrowings were not greater than could be prudently carried in view of our large working capital and other assets and in view of the cash balance carried by the company and the forecasts of our financial affairs. I explained that our banking partners concurred in this opinion and saw no difficulty in carrying our loans until liquidation through the operations of the business could be accomplished. Mr. Durant stated that he was worried about his personal accounts but made no definite explanation, and no opportunity was presented for an inquiry, which did not seem necessary at the time. However, after leaving this meeting, Mr. Raskob speculated on the probable meaning of Mr. Durant's words. In answer to Mr. Raskob's question the next day as to the condition of Mr. Durant's affairs and particularly as to whether his indebtedness amounted to "six or twenty-six million dollars", Mr. Durant replied that he would have to look up the matter. Mr.

(12th)
Raskob and I left New York on Friday/ and did not return until the follow-

—6—

ing Tuesday, November 16th, at which time we went to Mr. Durant's office in the morning, with the determination to endeavor to find out his true position, as we had agreed in conversation that Durant's personal affairs, if seriously involved, might indirectly affect the credit of Gen-

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eral Motors Company. Mr. Durant was very busy that day, seeing people, rushing to the telephone, and in and out of his room, so that, although we waited patiently for several hours, interrupted only by lunch time, it was not until four o'clock that afternoon that Mr. Durant began to give us figures indicating his situation. He had pencil memoranda of the number of loans at banks. The total memoranda, as written down by us from what he said, showed an indebtedness of twenty million dollars, all presumably on brokers' accounts and supported by 1,300,000 shares of stock owned by others and by an unknown amount of collateral belonging to Durant; also, $14,190,000. which Durant estimated he owed personally to banks and brokers, against which he held three million shares of General Motors stock, this, of course, exclusive of the 1,300,000 shares owned by others. Mr. Durant stated that he had no personal books or accounts and was wholly unable to give definite statement as to the total indebtedness; what part of it was his personal and what part was the indebtedness of others on which he had lent collateral without other commitment. Apparently, he had no summary of brokers' accounts in hand. However, the whole situation, besides being very involved, seemed very serious. Mr. Durant promised to ask his brokers for accounts in order

to make some positive statement.

(Nov. 16th.)

On Tuesday evening Mr. Durant had a call from McClure, Jones & Reed, brokers, for $150,000., to support his account. This amount was fixed up in some way.

(Nov. 17th)

On Wednesday/ we inquired for the brokers' accounts and found that directions had been given to make the statement as of the close of business Wednesday, November 17th, so that nothing could be done that day. Meantime, the statements already given appeared so indefinite that Mr. Raskob and I were loath to believe the accounts in any way accurate. However, the situation seemed serious enough to warrant speculating on a plan for relief. We decided that, in order to avert a crisis, it might be possible to organize a company to take over Mr. Durant's holdings, issuing $20,000,000. of notes, which would be offered as collateral to the holder of obligations, and that the duPont interests might invest $7,000,000., or even $10,000,000. in securities of the company in order to furnish cash to liquidate pressing accounts and make payments, in part, of others.

On Thursday, November 18th, the broker accounts started to come in, and it required all of that day to get the statement in shape that was agreed upon by Mr. Durant as correct. The statement, however, was not capable of accurate checking, excepting from the broker accounts presented. There was nothing to show that these covered all the broker accounts, and there was nothing very definite in regard to bank loans, nor to the syndicate accounts in which Mr. Durant

—8—

was involved as lender of collateral. However, a summary sheet was made up from the data and given to the typist for copying late Thursday afternoon. About that time Mr. Durant called Mr. Raskob and me to his office, stating that some of the Morgan partners were to call upon him

shortly and asked us to be present at the meeting. We told him that his position differed so entirely from that represented to us and to Morgan & Co. that it was impossible for us to sit in a meeting with him and the Morgan partners, unless he agreed to make a complete statement to them. He did not agree to this point and we left the room. About 6:30 P. M. we started to leave for the hotel and met Messrs. Morrow, Cochran and Whitney, who had met Mr. Durant, with a promise on the part of Mr. Whitney to return at nine o'clock that evening. Mr. Morrow called me aside and stated that they wanted to get in touch with me for a few minutes' interview. He and his associates and I then repaired to Mr. Raskob's room and, after a few preliminaries, I asked whether Mr. Durant had made a complete statement to them. To this Mr. Morrow replied "yes", and produced a copy of the typed summary which I had prepared but which I had not yet myself seen in finished form. Then ensued a discussion of the whole subject, in which the Morgan partners outlined their opinion of the extreme seriousness of the situation and the panic that might result, in the event of Mr. Durant's failure, which might possibly involve the failure of several brokers and some of the banks, particularly as there were two

large and critically weak accounts in the street. Mr. Morrow stated that he would give up an engagement and return at nine o'clock and I agreed to break an engagement and do likewise. Our conversation occupied not much more than a half hour. I returned to the hotel and, together with Mr. Raskob, went to the office at the appointed time, where three Morgan partners had assembled. Mr. Raskob outlined to Mr. Morrow our rough plan of giving assistance,

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6th. It is understood that as a part of this plan, there will be supplied through channels as hereinafter set forth, such amount as may be necessary, not exceeding $35,000,000, towards completely clearing up indebtedness at banks and elsewhere of the following:

Du Pont Securities Company
Chevrolet Motor Company
Canadian Explosives, Ltd. (In respect to the ($8,000,000 due General Motors Corp. in subscription to 400,000 shares of Common stock at $20)

7th. Twenty-five million dollars, ($25,000,000) will be supplied by E. I. du Pont de Nemours & Company (the holding company) in its entirety towards meeting the requirements outlined in Article 6 above, through outright purchase of General Motors Corporation Common Stock.

8th. The balance required, but not to exceed $10,000,000, will be supplied by E. I. du Pont de Nemours Manufacturing Company, either by way of advances (except that there will be no advances to E. I. du Pont de Nemours & Company) or by outright purchase of General Motors Corporation Common Stock, it being understood that any General Motors Corporation common stock thus acquired by E. I. du Pont de Nemours Manufacturing Company will be sold at the earliest

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advantageous opportunity in the discretion of its board of directors.

9th. Twenty-five million dollars ($25,000,000) required by E. I. du Pont de Nemours & Company (the hold-

ing company) will be available from sale through J. P. Morgan & Company of like amount of ten year collateral trust notes, secured by 100% of the Common Stock of E. I. du Pont de Nemours Manufacturing Company and all of the Common Stock of General Motors Corporation owned (not less than 6,500,000 shares).

10th. Should it prove desirable under this plan to offer to the stockholders of E. I. du Pont de Nemours & Company, the right to purchase common stock of E. I. du Pont de Nemours Manufacturing Company and/or General Motors Corporation common stock, such course will be followed provided the common stock of E. I. du Pont de Nemours Manufacturing Company and of General Motors Corporation available for collateral under the note issue of E. I. du Pont de Nemours & Company shall not be reduced to below seventy-five percent (75%) of the amounts respectively specified in Article 9 hereof, and further provided that the amount of notes to be issued by E. I. du Pont de Nemours & Company shall be reduced in ratable proportion to the reduction in collateral available for security.

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PLAN NO.2

1st. This plan has as its object a final result similar to that set forth in Plan No. 1, the approach being different. The procedure would be under the following lines:

2nd. du Pont American Industries will be wound up, with a distribution of its assets to E. I. du Pont de Nemours & Company in final liquidation, as in the case of Plan No. 1.

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3rd. A new company, to be known as du Pont Securities Company (or such other name as may be deemed suitable) will be formed, to occupy the position of holding company as employed in Plan No. 1, with appropriate authorized capital divided into:

7% Debenture Stock, similar in conditions to the Debenture Stock of E. I. du Pont de Nemours & Co. and Common Stock, of $100 Par Value.

4th. du Pont Securities Company, in consideration for mutual covenants will offer to exchange shares of its authorized common stock of $100 par value for common stock of E. I. du Pont de Nemours & Co, share for share, conditioned upon at least 75% of the common stock of E. I. du Pont de Nemours & Company being thus exchanged.

5th. du Pont Securities Company will issue to E. I. du Pont de Nemours & Company for value received, $14,125,810. par value of its authorized 7% Debenture Stock, in consideration of the latter corporation undertaking to employ the same for the purpose of buying in and retiring a like par value of its own 6% Debenture Stock outstanding; or otherwise retaining same in its treasury.

6th. After a closing of the offer of exchange of du Pont Securities Company Common Stock for Common Stock of E. I. du Pont de Nemours & Company, and in the event that at least 75% of the outstanding stock of E. I. du Pont de Nemours & Company has been so excahnged, E. I. du Pont de Nemours & Company will offer to its Common Stockholders pro-rata to their holdings, not less than 6,500,000

shares of General Motors Corporation Common Stock, for cash, or its equivalent to the aggregate amount of $25,000,000. plus a proper valuation of $14,125,810. of 7% Debenture stock of du Pont Securities Company. applied as part payment on account of subscription from the latter under its rights as holder of at least 75% of the Common Stock of E. I. du Pont de Nemours & Company.

7th. Under this plan E. I. du Pont de Nemours & Company will supply, not to exceed $35,000,000., cash set forth in Plan No. 1 as being required. Of this aggregate amount something over $25,000,000. will be supplied by the stockholders, including du Pont Securities Company.

8th. du Pont Securities Company will supply such percentage of $25,000,000. as corresponds to the percentage ownership of Common Stock of E. I. du Pont de Nemours & Company and will derive such amount of cash from the sale of 10 year collateral trust notes secured by all of the Common Stock of E. I. du Pont de Nemours & Company acquired through exchange, and all of the General Motors Corporation Common Stock acquired by purchase fom E. I. du Pont de Nemours & Company.

—8—

9th. If all of the Common Stockholders of E. I. du Pont de Nemours & Company were to exchange their stock for Common Stock of du Pont Securities Company, the final result would be that the latter would hold 100% of the Common Stock of E. I. du Pont de Nemours & Company and not less than 6,500,000 shares of General Motors Corporation Common Stock—all available for collateral security under a note issued required in the amount of $25,000,000.

To the extent that stockholders fail to enter the exchange, the collateral available for security and the amount of note issued by du Pont Securities Company will in each case be proportionately reduced.

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Mr. Raskob

~~The President~~ stated that the occasion for considering the matters referred to in the foregoing plans was due to the desirability of enabling General Motors Corporation to procure additional loans from the banks in order to strengthen its cash position, and particularly to enable it to effect the settlement of a large number of contracts for materials which it was represented could be disposed of on advantageous terms if approximately $15,000,000.00 were made available to the Company for that purpose. He said that he had been advised by Messrs.
that a careful investigation of the situation had convinced them that owing to the present condition in the money market it was difficult, if not impossible, for the General Motors Corporation materially to increase its loans from banks until the notes of the DuPont Securities Company and the Chevrolet Company, now held by banks, had been retired. He explained that it appeared possible to do this if either of the plans referred to above were adopted, and in view of the large interest held directly and indirectly by the E. I. duPont deNemours & Company in the General Motors Corporation it appeared clearly to be in the interests of the stockholders of the E. I. duPont deNemours & Company to adopt some plan by which the financial position of the General Motors Corporation could be strengthened.

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After discussion, the following resolution was offered and unanimously adopted:-

RESOLVED, that Mr. P. S. duPont be and he is hereby authorized to give assurances to Messrs. J. P. Morgan & Company and/or other banking institutions and firms either that one of the plans referred to above will be adopted within ninety days or in the event that neither of such plans are found to be desirable from our point of view then to give assurances that there will be substituted therefor some other plan satisfactory to Messrs. J. P. Morgan & Company, or that the notes of the duPont Securities Company and Chevrolet Motor Company now held by the banks will be taken up before July 1, 1921, it being understood that in the event that a plan is developed whereby the Board of Directors of E. I. duPont deNemours & Company feels that it would be justified in authorizing an issue of notes of the Company not to exceed $35,000,000.00, such a note issue will constitute an acceptable plan;

RESOLVED FURTHER, that the Finance Committee be given full power and authority to make such modifications in the foregoing plans as to details and to take such action in connection therewith as in its discretion may be in the best interest of this corporation, and to give such assurances as may be reasonably required under the circumstances.

NOTE: Italics indicate handwriting. Underscoring on first page, and deletions on first and ninth pages, are by hand. "Return to Executive Committee Room 9069" is stamped at the bottom of each page. "gmc-897m" is written at the bottom of the first nine pages and "gmc-897n" at the bottom of the last page.

Defendant's Exhibit (DP) No. 56

5654

MEMBERS OF GM BOARD AND GOVERNING COMMITTEES,

AUGUST 22, 1917 TO DECEMBER 31, 1952

General Motors Corporation

5655

BOARD OF DIRECTORS
(as of December 31)

Aug. 22, 1917	1917	1918	1919	1920	Term of Office
AGBishop	AGBishop	AGBishop	AGBishop	AGBishop	8-22-17 to 1-22-44
WPChrysler	WPChrysler	WPChrysler	WPChrysler		8-22-17 to 3-25-20
RHCollins	RHCollins	RHCollins	RHCollins	RHCollins	8-22-17 to 6-30-21
WLDay	WLDay	WLDay	WLDay	WLDay	8-22-17 to 5-13-25
PSduPont[1]	PSduPont[1]	PSduPont[1]	PSduPont[1]	PSduPont[1]	8-22-17 to 8- 7-44
WCDurant	WCDurant	WCDurant	WCDurant	WCDurant	8-22-17 to 4-20-21
JAHaskell	JAHaskell	JAHaskell	JAHaskell	JAHaskell	8-22-17 to 9- 9-23
LGKaufman	LGKaufman	LGKaufman	LGKaufman	LGKaufman	8-22-17 to 4-25-39
JHMcClement	JHMcClement	JHMcClement	JHMcClement		8-22-17 to 4-28-20
CSMott	CSMott	CSMott	CSMott	CSMott	8-22-17 to date
JJRaskob	JJRaskob	JJRaskob	JJRaskob	JJRaskob	8-22-17 to 3- 4-46
EVerlinden	EVerlinden	EVerlinden	EVerlinden	EVerlinden	8-22-17 to 4-19-22
FWWarner	FWWarner	FWWarner	FWWarner	FWWarner	8-22-17 to 9-22-21
		HMBarksdale[2]			6-27-18 to 10-18-18
		HFduPont	HFduPont	HFduPont	2-21-18 to 9- 5-44
		IduPont	IduPont	IduPont	2-21-18 to 9- 6-38
		LduPont	LduPont	LduPont	11- 7-18 to 6- 3-46
		FWHohensee	FWHohensee	FWHohensee	6-27-18 to 1-13-21
		RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	11- 7-18 to date
		APSloan,Jr.	APSloan,Jr.	APSloan,Jr.	11- 7-18 to date
			HHBassett	HHBassett	5- 1-19 to 10-17-26
				GFBaker	7-15-20 to 5-30-37
				DBrown	12-30-20 to date
				AChamberlin	4-28-20 to 1- 1-23
				CFKettering	12-30-20 to date
				LMcCowan	4-28-20 to 4- 2-45
				WMcMaster	4-28-20 to 5- 5-30
				SProsser	7-15-20 to 6- 3-40
				JTSmith	3-25-20 to 9-28-47
				ERStettiniusSr	7-15-20 to 9- 3-25
				WHWoodin	7-15-20 to 8-11-27
				CMWoolley	7-15-20 to 6- 6-38
				KWZimmerschied	12-30-20 to 4-18-23
				OWYoung	7-15-20 to 8- 1-38

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[1] Chairman.

[2] Appointed June 27, 1918, resigned October 14, 1918.

General Motors Corporation

BOARD OF DIRECTORS
(As of December 31)

1921	1922	1923	1924	1925	Term of Office
AGBishop	AGBishop	AGBishop	AGBishop	AGBishop	8-22-17 to 1-22-44
WLDay	WLDay	WLDay	WLDay		8-22-17 to 5-13-25
PSduPont[1]	PSduPont[1]	PSduPont[1]	PSduPont[1]	PSduPont[1]	8-22-17 to 8- 7-44
JAHaskell	JAHaskell				8-22-17 to 9- [illegible]-23
LOKaufman	LOKaufman	LOKaufman	LOKaufman	LOKaufman	8-22-17 to 4-25- [illegible]
CSMott	CSMott	CSMott	CSMott	CSMott	8-22-17 to date
JJRaskob	JJRaskob	JJRaskob	JJRaskob	JJRaskob	8-22-17 to 3- 4-46
EVérLinden					8-22-17 to 4-19-22
HFduPont	HFduPont	HFduPont	HFduPont	HFduPont	2-21-18 to 9- 5-44
IduPont	IduPont	IduPont	IduPont	IduPont	2-21-18 to 9- 6-38
LduPont	LduPont	LduPont	LduPont	LduPont	11- 7-18 to 6- 3-46
RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	11- 7-18 to date
APSloanJr	APSloanJr	APSloanJr	APSloanJr	APSloanJr	11- 7-18 to date
HHBassett	HHBassett	HHBassett	HHBassett	HHBassett	5- 1-19 to 10-17-26
GFBaker	GFBaker	GFBaker	GFBaker	GFBaker	7-15-20 to 5-30-37
DBrown	DBrown	DBrown	DBrown	DBrown	12-30-20 to date
AChamberlain	AChamberlain				4-28-20 to 1- 1-23
CFKettering	CFKettering	CFKettering	CFKettering	CFKettering	12-30-20 to date
LMcGowan	LMcGowan	LMcGowan	LMcGowan	LMcGowan	4-28-20 to 4- 2-45
WMcMaster	WMcMaster	WMcMaster	WMcMaster	WMcMaster	4-28-20 to 5- 5-30
SProsser	SProsser	SProsser	SProsser	SProsser	7-15-20 to 6- 3-40
JTSmith	JTSmith	JTSmith	JTSmith	JTSmith	3-25-20 to 9-28-47
ERStettiniusSr	ERStettiniusSr	ERStettiniusSr	ERStettiniusSr		7-15-20 to 9- 3-25
WHWoodin	WHWoodin	WHWoodin	WHWoodin	WHWoodin	7-15-20 to 8-11-27
CMWoolley	CMWoolley	CMWoolley	CMWoolley	CMWoolley	7-15-20 to 6- 6-38
KWZimmerschied	KWZimmerschied				12-30-20 to 4-18-23
ODYoung	ODYoung	ODYoung	ODYoung	ODYoung	7-15-20 to 8- 1-38
FJFisher	FJFisher	FJFisher	FJFisher	FJFisher	6-30-21 to 11- 5-34
AHSwayne	AHSwayne	AHSwayne	AHSwayne	AHSwayne	1-13-21 to 4-16-37
	GHHannum	GHHannum	GHHannum		4-19-22 to 5-13-25
	ABCHardy	ABCHardy	ABCHardy		4-19-22 to 5-13-25
	HHRice	HHRice	HHRice		4-19-22 to 5-13-25
		JDMooney	JDMooney	JDMooney	(11- 8-23 to 1- 5-42 (3- 5-45 to 12-31-45
		DPage	DPage	DPage	4-18-23 to 2-28-40
		JLPratt	JLPratt	JLPratt	4-18-23 to date
			CTFisher	CTFisher	9-25-24 to 11- 5-34
			LPFisher	LPFisher	9-25-24 to date
			WSKnudsen	WSKnudsen	(4-16-24 to 9- 3-40 (7- 2-45 to 4-27-48
			GWhitney	GWhitney	9-25-24 to date
				JSMorganJr	9-30-25 to 12- 1-41

[1] Chairman.

General Motors Corporation

BOARD OF DIRECTORS
(as of December 31)

1926	1927	1928	1929	1930	Term of Office
AGBishop	AGBishop	AGBishop	AGBishop	AGBishop	8-22-17 to 1-22-44
PSduPont[1]	PSduPont[1]	PSduPont[1]	PSduPont	PSduPont	8-22-17 to 8- 7-44
LOKaufman	LOKaufman	LOKaufman	LOKaufman	LOKaufman	8-22-17 to 4-25-39
CSMott	CSMott	CSMott	CSMott	CSMott	8-22-17 to date
JJRaskob	JJRaskob	JJRaskob	JJRaskob	JJRaskob	8-22-17 to 3- 4-46
HFduPont	HFduPont	HFduPont	HFduPont	HFduPont	2-21-18 to 9- 5-44
IduPont	IduPont	IduPont	IduPont	IduPont	2-21-18 to 9- 6-38
LduPont	LduPont	LduPont	LduPont[1]	LduPont[1]	11- 7-18 to 6- 3-46
RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	11- 7-18 to date
APSloanJr	APSloanJr	APSloanJr	APSloanJr	APSloanJr	11- 7-18 to date
GFBaker	GFBaker	GFBaker	GFBaker	GFBaker	7-15-20 to 5-30-37
DBrown	DBrown	DBrown	DBrown	DBrown	12-30-20 to date
CFKettering	CFKettering	CFKettering	CFKettering	CFKettering	12-30-20 to date
LMcGowan	LMcGowan	LMcGowan	LMcGowan	LMcGowan	4-28-20 to 4- 2-45
WMcMaster	WMcMaster	WMcMaster	WMcMaster		4-28-20 to 5- 5-30
SProsser	SProsser	SProsser	SProsser	SProsser	7-15-20 to 6- 3-40
JTSmith	JTSmith	JTSmith	JTSmith	JTSmith	3-25-20 to 9-28-47
WHWoodin					7-15-20 to 8-11-27
CMWoolley	CMWoolley	CMWoolley	CMWoolley	CMWoolley	7-15-20 to 6- 6-38
ODYoung	ODYoung	ODYoung	ODYoung	ODYoung	7-15-20 to 8- 1-38
FJFisher	FJFisher	FJFisher	FJFisher	FJFisher	6-30-21 to 11- 5-34
AHSwayne	AHSwayne	AHSwayne	AHSwayne	AHSwayne	1-13-21 to 4-16-37
JDMooney	JDMooney	JDMooney	JDMooney	JDMooney	(11- 8-23 to 1- 5-42 (3- 5-45 to 12-31-45
DPage	DPage	DPage	DPage	DPage	4-18-23 to 2-28-40
JLPratt	JLPratt	JLPratt	JLPratt	JLPratt	4-18-23 to date
CTFisher	CTFisher	CTFisher	CTFisher	CTFisher	9-25-24 to 11- 5-34
LPFisher	LPFisher	LPFisher	LPFisher	LPFisher	9-25-24 to date
WSKnudsen	WSKnudsen	WSKnudsen	WSKnudsen	WSKnudsen	(4-16-24 to 9- 3-40 (7- 2-45 to 4-27-48
GWhitney	GWhitney	GWhitney	GWhitney	GWhitney	9-25-24 to date
JSMorganJr	JSMorganJr	JSMorganJr	JSMorganJr	JSMorganJr	9-30-25 to 12- 1-41
	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	2-10-27 to date
	CCCooper	CCCooper	CCCooper		8-11-27 to 4-30-30
	WAFisher	WAFisher	WAFisher	WAFisher	2-10-27 to 4-28-42
			FOpel	FOpel	5- 8-29 to 8-30-38
				ABPurvis	6- 2-30 to 12- 4-39

[1] Chairman. Lammot du Pont succeeded P. S. du Pont, Feb. 7, 1929.

General Motors Corporation

BOARD OF DIRECTORS
(as of December 31)

1931	1932	1933	1934	1935	Term of Office
AGBishop	AGBishop	AGBishop	AGBishop	AGBishop	8-22-17 to 1-22-44
PSduPont	PSduPont	PSduPont	PSduPont	PSduPont	8-22-17 to 8- 7-44
LOKaufman	LOKaufman	LOKaufman	LOKaufman	LOKaufman	8-22-17 to 4-25-39
CSMott	CSMott	CSMott	CSMott	CSMott	8-22-17 to date
JJRaskob	JJRaskob	JJRaskob	JJRaskob	JJRaskob	8-22-17 to 3- 4-46
HFduPont	HFduPont	HFduPont	HFduPont	HFduPont	2-21-18 to 9- 5-44
IduPont	IduPont	IduPont	IduPont	IduPont	2-21-18 to 9- 6-38
LduPont[1]	LduPont[1]	LduPont[1]	LduPont[1]	LduPont[1]	11- 7-18 to 6- 3-46
RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	11- 7-18 to date
APSloan,Jr.	APSloan,Jr	APSloan,Jr.	APSloan,Jr.	APSloan,Jr.	11- 7-18 to date
GFBaker	GFBaker	GFBaker	GFBaker	GFBaker	7-15-20 to 5-30-37
DBrown	DBrown	DBrown	DBrown	DBrown	12-30-20 to date
CFKettering	CFKettering	CFKettering	CFKettering	CFKettering	12-30-20 to date
LMcGowan	LMcGowan	LMcGowan	LMcGowan	LMcGowan	4-28-20 to 4-2 -45
SProsser	SProsser	SProsser	SProsser	SProsser	7-15-20 to 6- 3-40
JTSmith	JTSmith	JTSmith	JTSmith	JTSmith	3-25-20 to 9-28-47
CMWoolley	CMWoolley	CMWoolley	CMWoolley	CMWoolley	7-15-20 to 6- 6-38
ODYoung	ODYoung	ODYoung	ODYoung	ODYoung	7-15-20 to 8- 1-38
FJFisher	FJFisher	FJFisher			6-30-21 to 11- 5-34
AHSwayne	AHSwayne	AHSwayne	AHSwayne	AHSwayne	1-13-21 to 4-16-37
JDMooney	JDMooney	JDMooney	JDMooney	JDMooney	(11- 8-23 to 1- 5-42 (3- 5-45 to 12-31-45
DPage	DPage	DPage	DPage	DPage	4-18-23 to 2-28-40
JLPratt	JLPratt	JLPratt	JLPratt	JLPratt	4-18-23 to date
CTFisher	CTFisher	CTFisher			9-25-24 to 11- 5-34
LPFisher	LPFisher	LPFisher	LPFisher	LPFisher	9-25-24 to date
WSKnudsen	WSKnudsen	WSKnudsen	WSKnudsen	WSKnudsen	(4-16-24 to 9- 3-40 (7- 2-45 to 4-27-48
GWhitney	GWhitney	GWhitney	GWhitney	GWhitney	9-25-24 to date
JSMorgan,Jr.	JSMorgan,Jr.	JSMorgan,Jr.	JSMorgan,Jr.	JSMorgan,Jr.	9-30-25 to 12- 1-41
WSCarpenterJr.	WSCarpenterJr.	WSCarpenterJr.	WSCarpenterJr.	WSCarpenterJr	2-10-27 to date
WAFisher	WAFisher	WAFisher	WAFisher	WAFisher	2-10-27 to 4-28-42
FOpel	FOpel	FOpel	FOpel	FOpel	5- 8-29 to 8-30-38
ABPurvis	ABPurvis	ABPurvis	ABPurvis	ABPurvis	6- 2-30 to 12- 4-39
		ABradley	ABradley	ABradley	11- 6-33 to date
			RGrant	RGrant	11- 5-34 to date
			OEHunt	OEHunt	11- 5-34 to date
			JJSchumannJr.	JJSchumannJr.	11- 5-34 to date
			CEWilson	CEWilson	11- 5-34 to date

[1] Chairman.

General Motors Corporation

BOARD OF DIRECTORS
(as of December 31)

1936	1937	1938	1939	1940	Term of Office
AGBishop	AGBishop	AGBishop	AGBishop	AGBishop	8-22-17 to 1-22-44
PSduPont	PSduPont	PSduPont	PSduPont	PSduPont	8-22-17 to 8- 7-44
LOKaufman	LOKaufman	LOKaufman			8-22-17 to 4-25-39
CSMott	CSMott	CSMott	CSMott	CSMott	8-22-17 to date
JJRaskob	JJRaskob	JJRaskob	JJRaskob	JJRaskob	8-22-17 to 3- 4-46
HFduPont	HFduPont	HFduPont	HFduPont	HFduPont	2-21-18 to 9- 5-44
IduPont	IduPont				2-21-18 to 9- 6-38
LduPont[1]	LduPont	LduPont	LduPont	LduPont	11- 7-18 to 6- 3-46
RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	11- 7-18 to date
APSloanJr	APSloanJr1	APSloanJr1	APSloanJr1	APSloanJr1	11- 7-18 to date
GFBaker					7-15-20 to 5-30-37
DBrown	DBrown	DBrown	DBrown	DBrown	12-30-20 to date
CFKettering	CFKettering	CFKettering	CFKettering	CFKettering	12-30-20 to date
LMcGowan	LMcGowan	LMcGowan	LMcGowan	LMcGowan	4-28-20 to 4- 2-45
SProsser	SProsser	SProsser	SProsser		7-15-20 to 6- 3-40
JTSmith	JTSmith	JTSmith	JTSmith	JTSmith	3-25-20 to 9-28-47
CMWoolley	CMWoolley				7-15-20 to 6- 6-38
ODYoung	ODYoung				7-15-20 to 8- 1-38
AHSwayne					1-13-21 to 4-16-37
JDMooney	JDMooney	JDMooney	JDMooney	JDMooney	(11- 8-23 to 1- 5-42 (3- 5-45 to 12-31-45
DPage	DPage	DPage	DPage		4-18-23 to 2-28-40
JLPratt	JLPratt	JLPratt	JLPratt	JLPratt	4-18-23 to date
LPFisher	LPFisher	LPFisher	LPFisher	LPFisher	9-25-24 to date
WSKnudsen	WSKnudsen	WSKnudsen	WSKnudsen		(4-16-24 to 9- 3-40 (7- 2-45 to 4-27-48
GWhitney	GWhitney	GWhitney	GWhitney	GWhitney	9-25-24 to date
JSMorganJr	JSMorganJr	JSMorganJr	JSMorganJr	JSMorganJr	9-30-25 to 12- 1-41
WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	2-10-27 to date
WAFisher	WAFisher	WAFisher	WAFisher	WAFisher	2-10-27 to 4-28-42
FOpel	FOpel				5- 8-29 to 8-30-38
ABPurvis	ABPurvis	ABPurvis			6- 2-30 to 12- 4-39
ABradley	ABradley	ABradley	ABradley	ABradley	11- 6-33 to date
RGrant	RGrant	RGrant	RGrant	RGrant	11- 5-34 to date
OEHunt	OEHunt	OEHunt	OEHunt	OEHunt	11- 5-34 to date
JJSchumannJr	JJSchumannJr	JJSchumannJr	JJSchumannJr	JJSchumannJr	11- 5-34 to date
CEWilson	CEWilson	CEWilson	CEWilson	CEWilson	11- 5-34 to date
	MECoyle	MECoyle	MECoyle	MECoyle	4-27-37 to 12/31/50
		HBduPont	HBduPont	HBduPont	10- 3-38 to date
				HHCurtice	8- 5-40 to date

[1] Chairman. A. P. Sloan, Jr. succeeded Lammot du Pont, May 3, 1937.

General Motors Corporation

BOARD OF DIRECTORS
(as of December 31)

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1941	1942	1943	1944	1945	Term of Office
AGBishop	AGBishop	AGBishop			8-22-17 to 1-22-44
PSduPont	PSduPont	PSduPont			8-22-17 to 8-7-44
CSMott	CSMott	CSMott	CSMott	CSMott	8-22-17 to date
JJRaskob	JJRaskob	JJRaskob	JJRaskob	JJRaskob	8-22-17 to 3- 4-46
HFduPont	HFduPont	HFduPont			2-21-18 to 9- 5-44
LduPont	LduPont	LduPont	LduPont	LduPont	11- 7-18 to 6- 3-46
RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	11- 7-18 to date
APSloanJr[1]	APSloanJr[1]	APSloanJr[1]	APSloanJr[1]	APSloanJr[1]	11- 7-18 to date
DBrown	DBrown	DBrown	DBrown	DBrown	12-30-20 to date
CFKettering	CFKettering	CFKettering	CFKettering	CFKettering	12-30-20 to date
LMcGowan	LMcGowan	LMcGowan	LMcGowan		4-28-20 to 4- 2-45
JTSmith	JTSmith	JTSmith	JTSmith	JTSmith	3-25-20 to 9-28-47
JDMooney				JDMooney[2]	11- 8-23 to 1- 5-42
					3- 5-45 to 12-31-45
JLPratt	JLPratt	JLPratt	JLPratt	JLPratt	4-18-23 to date
LPFisher	LPFisher	LPFisher	LPFisher	LPFisher	9-25-24 to date
GWhitney	GWhitney	GWhitney	GWhitney	GWhitney	9-25-24 to date
WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	2-10-27 to date
WAFisher					2-10-27 to 4-28-42
ABradley	ABradley	ABradley	ABradley	ABradley	11- 6-33 to date
RGrant	RGrant	RGrant	RGrant	RGrant	11- 5-34 to date
OEHunt	OEHunt	OEHunt	OEHunt	OEHunt	11 - 5-34 to date
JJSchumannJr	JJSchumannJr	JJSchumannJr	JJSchumannJr	JJSchumannJr	11- 5-34 to date
CEWilson	CEWilson	CEWilson	CEWilson	CEWilson	11- 5-34 to date
MECoyle	MECoyle	MECoyle	MECoyle	MECoyle	4-27-37 to 12-31-50
HBduPont	HBduPont	HBduPont	HBduPont	HBduPont	10- 3-38 to date
HHCurtice	HHCurtice	HHCurtice	HHCurtice	HHCurtice	8- 5-40 to date
	FGDonner	FGDonner	FGDonner	FGDonner	1- 5-42 to date
	EFFisher	EFFisher	EFFisher	EFFisher	4-28-42 to date
			TPArcher	TPArcher	8- 7-44 to 8-10-49
			LduPCopeland	LduPCopeland	9- 5-44 to date
			LWDouglas	LWDouglas	12- 4-44 to date
			ABEchols	ABEchols	8- 7-44 to date
				WSKnudsen	(4-16-24 to 9- 3-40
					(7- 2-45 to 4-27-48

1 Chairman.

2 Appointed March 5, 1945, retired December 31, 1945.

General Motors Corporation

BOARD OF DIRECTORS
(as of December 31)

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1946	1947	1948	1949	1950	Term of Office
CSMott	CSMott	CSMott	CSMott	CSMott	8-22-17 to date
RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin	11- 7-18 to date
APSloan,Jr[1]	APSloan,Jr[1]	APSloan,Jr[1]	APSloan,Jr[1]	APSloan,Jr[1]	11- 7-18 to date
DBrown	DBrown	DBrown	DBrown	DBrown	12-30-20 to date
CFKettering	CFKettering	CFKettering	CFKettering	CFKettering	12-30-20 to date
JTSmith					3-25-20 to 9-28-47
JLPratt	JLPratt	JLPratt	JLPratt	JLPratt	4-18-23 to date
LPFisher	LPFisher	LPFisher	LPFisher	LPFisher	9-25-24 to date
GWhitney	GWhitney	GWhitney	GWhitney	GWhitney	9-25-24 to date
WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	2-10-27 to date
ABradley	ABradley	ABradley	ABradley	ABradley	11- 6-33 to date
RGrant	RGrant	RGrant	RGrant	RGrant	11- 5-34 to date
OEHunt	OEHunt	OEHunt	OEHunt	OEHunt	11- 5-34 to date
JJSchumannJr	JJSchumannJr	JJSchumannJr	JJSchumannJr	JJSchumannJr	11- 5-34 to date
CEWilson	CEWilson	CEWilson	CEWilson	CEWilson	11- 5-34 to date
MECoyle	MECoyle	MECoyle	MECoyle	MECoyle	4-27-37 to 12-31-50
HBduPont	HBduPont	HBduPont	HBduPont	HBduPont	10- 3-38 to date
HHCurtice	HHCurtice	HHCurtice	HHCurtice	HHCurtice	8- 5-40 to date
FGDonner	FGDonner	FGDonner	FGDonner	FGDonner	1- 5-42 to date
EFFisher	EFFisher	EFFisher	EFFisher	EFFisher	4-28-42 to date
TPArcher	TPArcher				8- 7-44 to 8-10-49
LduPCopeland	LduPCopeland	LduPCopeland	LduPCopeland	LduPCopeland	9- 5-44 to date
LWDouglas	LWDouglas	LWDouglas	LWDouglas	LWDouglas	12- 4-44 to date
ABEchols	ABEchols	ABEchols	ABEchols	ABEchols	8- 7-44 to date
WSKnudsen	WSKnudsen				(4-16-24 to 9- 3-40
					(7- 2-45 to 4-27-48
RKEvans	RKEvans	RKEvans	RKEvans	RKEvans	6- 3-46 to date
LCGoad	LCGoad	LCGoad	LCGoad	LCGoad	6- 3-46 to date
EFJohnson	EFJohnson	EFJohnson	EFJohnson	EFJohnson	1- 7-46 to date
		ERGodfrey	ERGodfrey	ERGodfrey	8- 2-48 to date
		BDKunkle	BDKunkle	BDKunkle	6- 7-48 to date
		RKMellon	RKMellon	RKMellon	1- 5-48 to date
		FLBurke	FLBurke		8- 2-48 to 1[illegible] 9-50
			HCAlexander	HCAlexander	9-12-49 to date

1 Chairman.

General Motors Corporation

BOARD OF DIRECTORS
(as of December 31)

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1951	1952	Term of Office
CSMott	CSMott	8-22-17 to date
RSMcLaughlin	RSMcLaughlin	11- 7-18 to date
APSloanJr[1]	APSloanJr[1]	11- 7-18 to date
DBrown	DBrown	12-30-20 to date
CFKettering	CFKettering	12-30-20 to date
JLPratt	JLPratt	4-18-23 to date
LFFisher	LFFisher	9-25-24 to date
GWhitney	GWhitney	9-25-24 to date
WSCarpenterJr	WSCarpenterJr	2-10-27 to date
ABradley	ABradley	11- 6-33 to date
RGrant	RGraht	11- 5-34 to date
OEHunt	OEHunt	11- 5-34 to date
JJSchumannJr	JJSchumannJr	11- 5-34 to date
CEWilson	CEWilson	11- 5-34 to date
HBduPont	HBduPont	10- 3-38 to date
HHCurtice	HCurtice	8- 5-40 to date
FGDonner	Donner	1- 5-42 to date
EFFisher	Fisher	4-28-42 to date
IduPCopeland	uPCopeland	9- 5-44 to date
LWDouglas	Douglas	12- 4-44 to date
ABEchols	ABEchols	8- 7-44 to date
EFJohnson	EFJohnson	1- 7-46 to date
RKEvans	RKEvans	6- 3-46 to date
LCGoad	LCGoad	6- 3-46 to date
RKMellon	RKMellon	1- 5-48 to date
BDKunkle	BDKunkle	6- 7-48 to date
ERGodfrey	ERGodfrey	8- 2-48 to date
HCAlexander	HCAlexander	9-12-49 to date
CROsborn	CROsborn	1- 1-51 to date
JFGordon	JFGordon	1- 1-51 to date
HJKlingler	HJKlingler	1- 1-51 to date
CHKindl	CHKindl	1- 1-51 to date
SESkinner	SESkinner	1- 8-51 to date
LDClay	LDClay	6- 4-51 to date
	KTCompton	1- 7-52 to date

[1] Chairman.

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General Motors Corporation

FINANCE COMMITTEE
(as of December 31)

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Aug. 23 1917	1917	1918	1919	1920	Term of Office
PSduPont	PSduPont	PSduPont	PSduPont	PSduPont	8-23-17 to 5- 3-37
WCDurant	WCDurant	WCDurant	WCDurant	WCDurant	8-23-17 to 1-13-21
LGKaufman[1]	LGKaufman[1]				8-23-17 to 2-21-18
JHMcClement	JHMcClement				8-23-17 to 3-21-18
JJRaskob	JJRaskob	JJRaskob[1]	JJRaskob[1]	JJRaskob[1]	8-23-17 to 8- 9-28
					5- 9-29 to 5- 3-37
		HMBarksdale[2]			6-27-18 to 10-18-18
		HFduPont	HFduPont	HFduPont	2-21-18 to 5- 3-37
		IduPont	IduPont	IduPont	2-21-18 to 5- 3-37
		LduPont	LduPont	LduPont	11- 7-18 to 5- 3-37
		JAHaskell	JAHaskell	JAHaskell	2-21-18 to 9- 9-23
				GFBaker	7-15-20 to 5- 3-37
				SProsser	7-15-20 to 5- 3-37
				ERStettiniusSr	7-15-20 to 9- 3-25

[1] Chairman.

[2] H. M. Barksdale served from June 27, 1918 to Oct. 18, 1918.

1921	1922	1923	1924	1925	Term of Office
PSduPont	PSduPont	PSduPont	PSduPont	PSduPont	8-23-17 to 5- 3-37
JJRaskob[1]	JJRaskob[1]	JJRaskob[1]	JJRaskob[1]	JJRaskob[1]	8-23-17 to 8- 9-28
					5- 9-29 to 5- 3-37
HFduPont	HFduPont	HFduPont	HFduPont	HFduPont	2-21-18 to 5- 3-37
IduPont	IduPont	IduPont	IduPont	IduPont	2-21-18 to 5- 3-37
LduPont	LduPont	LduPont	LduPont	LduPont	11- 7-18 to 5- 3-37
JAHaskell	JAHaskell				2-21-18 to 9- 9-23
GFBaker	GFBaker	GFBaker	GFBaker	GFBaker	7-15-20 to 5- 3-37
SProsser	SProsser	SProsser	SProsser	SProsser	7-15-20 to 5- 3-37
ERStettiniusSr	ERStettiniusSr	ERStettiniusSr	ERStettiniusSr		7-15-20 to 9- 3-25
DBrown	DBrown	DBrown	DBrown	DBrown	1-13-21 to 5- 3-37
	APSloanJr	APSloanJr	APSloanJr	APSloanJr	4-25-22 to 5- 3-37
			GWhitney	GWhitney	9-25-24 to 5- 3-37
			FJFisher	FJFisher	9-25-24 to 11-5-34
				JSMorganJr	9-30-25 to 5- 3-37

[1] Chairman.

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General Motors Corporation

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FINANCE COMMITTEE
(as of December 31)

1926	1927	1928	1929	1930	Term of Office
PSduPont	PSduPont	PSduPont	PSduPont	PSduPont	8-23-17 to 5- 3-37
JJRaskob[1]	JJRaskob[1]		JJRaskob	JJRaskob	8-23-17 to 8- 9-28
					5- 9-29 to 5- 3-37
HFduPont	HFduPont	HFduPont	HFduPont	HFduPont	2-21-18 to 5- 3-37
IduPont	IduPont	IduPont	IduPont	IduPont	2-21-18 to 5- 3-37
LduPont	LduPont	LduPont	LduPont	LduPont	11- 7-18 to 5- 3-37
GFBaker	GFBaker	GFBaker	GFBaker	GFBaker	7-15-20 to 5- 3-37
SProsser	SProsser	SProsser	SProsser	SProsser	7-15-20 to 5- 3-37
DBrown	DBrown	DBrown	DBrown[1]	DBrown[1]	1-13-21 to 5- 3-37
APSloanJr	APSloanJr	APSloanJr	APSloanJr	APSloanJr	4-25-22 to 5- 3-37
GWhitney	GWhitney	GWhitney	GWhitney	GWhitney	9-25-24 to 5- 3-37
FJFisher	FJFisher	FJFisher	FJFisher	FJFisher	9-25-24 to 11- 5-34
JSMorganJr	JSMorganJr	JSMorganJr	JSMorganJr	JSMorganJr	9-30-25 to 5- 3-37
	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	2-10-27 to 5- 3-37
			CSMott	CSMott	5- 9-29 to 5- 3-37

[1] Chairman. J. J. Raskob resigned on Aug. 9, 1928. Donaldson Brown was appointed Chairman on May 9, 1929.

1931	1932	1933	1934	1935	Term of Office
PSduPont	PSduPont	PSduPont	PSduPont	PSduPont	8-23-17 to 5- 3-37
JJRaskob	JJRaskob	JJRaskob	JJRaskob	JJRaskob	8-23-17 to 8- 9-28
HFduPont	HFduPont	HFduPont	HFduPont	HFduPont	5- 9-29 to 5- 3-37
					2-21-18 to 5- 3-37
IduPont	IduPont	IduPont	IduPont	IduPont	2-21-18 to 5- 3-37
LduPont	LduPont	LduPont	LduPont	LduPont	11- 7-18 to 5- 3-37
GFBaker	GFBaker	GFBaker	GFBaker	GFBaker	7-15-20 to 5- 3-37
SProsser	SProsser	SProsser	SProsser	SProsser	7-15-20 to 5- 3-37
DBrown[1]	DBrown[1]	DBrown[1]	DBrown[1]	DBrown[1]	1-13-21 to 5- 3-37
APSloanJr	APSloanJr	APSloanJr	APSloanJr	APSloanJr	4-25-22 to 5- 3-37
GWhitney	GWhitney	GWhitney	GWhitney	GWhitney	9-25-24 to 5- 3-37
FJFisher	FJFisher	FJFisher			9-25-24 to 11- 5-34
JSMorganJr	JSMorganJr	JSMorganJr	JSMorganJr	JSMorganJr	9-30-25 to 5- 3-37
WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	2-10-27 to 5- 3-37
CSMott	CSMott	CSMott	CSMott	CSMott	5- 9-29 to 5- 3-37
		ABradley	ABradley	ABradley	11- 6-33 to 5- 3-37

[1] Chairman.

General Motors Corporation

FINANCE COMMITTEE
(as of December 31)

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1936[2]	Term of Office
PSduPont	8-23-17 to 5- 3-37
JJRaskob	(8-23-17 to 8- 9-28 (5- 9-29 to 5- 3-37
HFduPont	2-21-18 to 5- 3-37
IduPont	2-21-18 to 5- 3-37
LduPont	11- 7-18 to 5- 3-37
GFBaker	7-15-20 to 5- 3-37
SProsser	7-15-20 to 5- 3-37
DBrown[1]	1-13-21 to 5- 3-37
APSloanJr	4-25-22 to 5- 3-37
GWhitney	9-25-24 to 5- 3-37
JSMorganJr	9-30-25 to 5- 3-37
WSCarpenterJr	2-10-27 to 5- 3-37
CSMott	5- 9-29 to 5- 3-37
ABradley	11- 6-33 to 5- 3-37

[1] Chairman.

[2] No change to May 3, 1937.

were not wholly completed and working capital requirements were not determined. It is now possible to give account of the expenditures of this development period and the sources of capital provided. With the exception of the final payments on the General Motors Building in Detroit, for which funds are held in reserve, the program is now finished, so that further construction or expansion will be determined entirely from current and future needs of the business independent of plans and commitments laid down prior to the year 1921.

On January 1, 1918, General Motors Corporation had total assets of $133,789,724, including $11,971,603 goodwill, patents and copyrights. On January 1, 1923, assets total $522,335,034, including $22,370,811 goodwill, patents and copyrights. At the earlier date the Corporation consisted of the four passenger car manufacturing divisions—Buick, Cadillac, Oakland and Oldsmobile—and the General Motors Truck Division, having a capacity of about 223,000 cars and trucks per annum, as measured by maximum quarterly sales prior to 1918. The Corporation owned no plant manufacturing small cars, had no owned supply of accessories, such as lighting, starting and ignition sets, roller bearings, ball bearings, etc.; it had no central experimental or development laboratories. Since January 1, 1918, the construction and expansion program has brought the Corporation to a manufacturing capacity of 750,000 passenger cars and trucks per annum, has placed it in position to manufacture all of its electrical equipment, including spark plugs and warning signals, all radiators, anti-friction bearings, wheel rims, steering gears, transmissions, engines, axles and open bodies. Through its stock holdings in Fisher Body Corporation, it controls the manufacture of its supply of closed bodies. The program was not developed as a whole but resulted from the constructive planning of three years. Confidence in the future was not misplaced, as sales in the last nine months of 1922 were at the rate of 515,000 units per annum, or 70% of the present manufacturing capacity; and single months have reached 80% of capacity. Estimates for the future indicate that the full manufacturing output will be required at no distant date.

3709

5677

The total cost of carrying out this program may be summed up as follows:

Real Estate, Plant and Equipment, Tools, etc., acquired three years, 1918 to 1920, inclusive	$214,605,825
Invested in allied and accessory companies	66,950,279
Total	$281,556,104

The cash for carrying out this work was supplied from several sources as follows:

FROM EARNINGS:			
Net earned income, three years, 1918 to 1920, exclusive of extraordinary write-offs of year 1920		$193,801,804	(100%)
Less: Federal taxes paid	$47,274,750		(24%)
Dividends paid	57,386,370		(30%)
Balance of earned income available for program		89,140,684	(46%)
Net amount available from reserve accounts		13,394,246	
Total cash available for construction and expansion program, from operations of 1918 to 1920 inclusive			$102,534,930 (27%)
FROM SALE OF SECURITIES:			
Proceeds from sale of Common Stock		$ 98,494,835	
Proceeds from sale of 6% Debenture Stock		25,425,000	
Proceeds from sale of 7% Debenture Stock		10,998,700	
Total cash due for construction and expansion program from sale of securities, 1918 to 1920, inclusive			134,918,535* (35%)
FROM FUND FOR BONUS, ETC.:			
From funds set aside in cash for bonus, etc., but paid in newly issued stock			13,569,144 (3%)
Total cash available from all sources			$251,022,609* (65%)
SECURITIES ISSUED IN PAYMENT FOR PROPERTIES WERE:			
Debenture and Common Stock		$122,141,520	
Purchase notes for part payment Fisher Body Corp. stock		9,840,000	
Mortgages assumed on properties purchased		1,629,070	
Total value of securities issued			133,610,590 (35%)
Total amount available for construction and expansion program			$384,633,199 (100%)

* Of this total $3,881,879 only remained uncollected on January 1, 1921

SUMMARY

Total funds, provided	$384,633,199
Total expended on capital account	281,556,104
Balance available for working capital	$103,077 095
Net working capital, January 1, 1918	65,605,969
Net working capital provided under program	$168,683,064

As the net working capital requirement of today, operating under a schedule almost identical with that laid down for the year August, 1920, to August, 1921, is about $126,000,000, the net working capital available

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under the original program, about $168,000,000, should have been much more than sufficient for the lesser operations of the year 1921. From the above it is clear that full provision for the construction and expansion program of the years 1918 to 1920, including working capital, was made prior to the end of the year 1920. Therefore, this program was in no wise responsible for the financial difficulties under which the Corporation labored during the latter part of 1920 and the year 1921. Explanation of these difficulties lies in another quarter.

Operations of the Years 1920, 1921 and 1922

At the close of the year 1920 the net working capital, exclusive of notes payable, in use prior to the write-off of inventories, was $242,830,271 or $116,354,034 above the amount required (December, 1922) to carry more than double the production of the earlier period. This made it necessary to borrow a maximum of $82,784,824 (on October 31, 1920). The reduction of the surplus materials purchased at high prices, and of inventory and other commitments made prior to December, 1920, resulted in a total liquidation loss of $84,869,893.

This condition of affairs was not reached without anticipatory warning. In the month of March, 1920, the President presented to the Executive Committee a schedule of proposed production made possible by the construction and expansion program then well on toward completion. He proposed that this schedule be adopted for the year August, 1920, to August, 1921. Though approved at the time, the schedule was revised in the month of May, 1920, to a proposed production almost identical with that in force during the last nine months of 1922. At this early date (May 13, 1920), the Executive Committee and Finance Committee noted the continued increase of inventories (to $167,965,641 on April 30, 1920). The Chairman of the Finance Committee explained fully to those in charge of operations of the Corporation the necessity of control, and, at his suggestion, a committee was appointed to allot among the Divisions of the Corporation the $150,000,000 considered available for inventories. The Chairman also stated that it was necessary not to increase inventories beyond this amount during the succeeding twelve months.

The report of the Inventory Allotment Committee was presented and approved before June 1, 1920. It was unfortunate that the rulings of the Executive and Finance Committees and their cautions remained unheeded. As a result, inventories reached a total of $209,000,000 at the end of October, 1920, exceeding by $60,000,000 the allotments of the

Executive and Finance Committees and by $100,000,000 the amount in actual use during the active summer of 1922. This excess accounted for about 70% of the borrowings at that time.

It was doubly unfortunate that the spirit of the committee rulings was totally disregarded by a few of the Divisions, the losses of which, due to expanded inventories and commitments for the future, amounted to $48,579,872, or much more than the total operating deficit of the whole Corporation during the year 1921. The operating losses of these Divisions during the liquidation and reconstruction period of 1921 added $15,330,938, making a total of $63,910,810 on their account.

Though the losses above enumerated were enormous, it should be fully realized that they were not typical of the operations of the Corporation as a whole; in fact, they related to ten Divisions only out of a total of thirty-four. The sales and profits of the twenty-four normally operated Divisions are shown below in Group I; the sales and profits of the ten unsatisfactory Divisions are shown in Group II. Of these ten, five were of small importance and were liquidated in 1921. Another, the Samson Tractor Division, is dealt with separately. The remaining four Divisions of Group II have since been restored to more normal conditions and to an earning power in line with the Divisions classed as Group I.

The following tabulation will better illustrate the relative importance of the two groups:

	Group I	Group II
Divisions involved	24	10
Net Sales:		
1920	$362,409,005	$204,911,599
1921	208,438,291	96,048,952
1922	296,756,778	161,713,088 (a)
Net Profits:		
1920	$ 68,525,545	$ 18,336,690
1921	22,802,537	*15,330,938* (b)
1922	59,078,448	11,007,517 (c)
Extraordinary write-offs, inventory adjustments and liquidation losses, 1920–1921–1922	36,290,020	48,579,872
Extraordinary write-offs compared to 1920–1921–1922 sales	4.2%	10.5%

(a) Does not include liquidating sales of Tractor Division. (b) Loss. (c) Does not include $5,688,091 liquidating loss of Tractor Division.

Tractor Investment

In the year 1917 General Motors Corporation purchased the stock of the Samson Sieve Grip Tractor Company of California. This company and its product had been under investigation by the President, and the purchase was made by him. He became General Manager of the Samson Tractor Division of the General Motors Corporation. On his recommendation the Executive and Finance Committees voted appropriations for

permanent investment in the Tractor Division amounting to $10,428,416, afterwards increased by $3,021,034, principally to cover overrun expenditures, and, in May, 1920, allotted to the division $7,000,000 for inventories. At the close of the year 1919 the Division's new facilities for the production of 100,000 tractors per annum were reported practically complete. (At that time the total investment amounted to $7,485,346.) On October 31, 1920, the fixed investment in the Tractor Division amounted to $10,905,927, and working capital to $18,595,144, a total of $29,501,071. The operating losses prior to December 31, 1920, and exclusive of extraordinary write-offs of that year were:

1917	$ 24,467
1918	1,868,986
1919	1,823,883
1920	8,228,956
	$11,946,292

After the tractor was fully developed and priced at $650, it was found that it could not be marketed profitably. Prices were raised only to discover that sales could not be made in competition with more cheaply designed tractors. In the meantime, numerous commitments for materials had been entered into, with a view to producing 70,000 tractors of this class; and, in addition, materials for producing 60,000 tractors of another class. This was the situation as it appeared December 1, 1920. The loss in liquidating inventories and commitments of this Division amounted to $21,293,752, in addition to the operating losses above noted of $11,946,292, making a total loss incurred of $33,240,044. Today the plant of the tractor division has been turned, in greater part, to other uses. As the liquidation of this Division has been completed, no further operating loss is to be expected.

The localization of the troubles of 1920–1921 makes it possible to present a fair comparison of the Corporation's earnings of the years 1919–1922 inclusive:

	1919	1920	1921(a)	1922
Gross capital employed at end of year	$469,737,345	$604,806,868	$404,914,312	$522,335,034
Earnings before dividends and Federal Taxes	90,517,519	67,779,710	21,116,697	62,611,244
Federal Taxes	30,000,000	3,894,000	.....	6,250,000
Earnings for Stockholders before write-offs	$ 60,517,519	$ 63,885,710	$ 21,116,697	$ 56,361,244
Write-offs of inventories and commitments	.....	26,002,188	59,796,490(b)	4,553,796
Net earnings as per annual statements	$ 60,517,519	$ 37,883,522	$ *38,679,793*(c)	$51,807,448
Sales, cars and trucks	391,738	393,075	109,396(d)	456,763

(a) Group I Divisions only. (b) Includes losses of Group II Divisions. (c) Loss. (d) Sales Group I Divisions only.

The earnings of these four years, 1919 to 1922 inclusive, as shown above, may be summarized as follows:

SUMMARY

EARNINGS:		
Total earnings four years, 1919–1922 before taxes (including Group I Divisions only for 1921)	$242,025,170	
Less extraordinary losses (Group I Divisions 1920, 1921, 1922)	36,290,020	
	$205,735,150	
DISPOSITION:		
Cash Dividends, Debenture and Preferred Stocks	$ 22,572,176	
Cash Dividends, Common Stock	65,863,224	
Total Cash Dividends	$ 88,435,400	43%
Stock Dividends paid on Common Stock	12,940,435	6%
Federal Tax Provision	40,144,000	20%
Total Losses, Group II Divisions	63,910,810	31%
Surplus	304.505	00%
	$205,735,150	100%

Thus has General Motors Corporation, in the brief period of five years, expanded its plant investment five times under a program that was completely financed as work progressed. The wisdom of the plan is shown by the fact that there is now demand for 80% of the facilities provided with promise of full use of these facilities at an early date. The plan is one that calls for no apologies for its inception and development, but it should be a source of satisfaction and pride to those who were responsible therefor.

Excepting for the year 1921, earnings of the Corporation have been satisfactory. The year 1921 showed a shrinkage of 45% in number of cars produced, and 44% in volume of sales, when compared with an average of the two preceding years, a record not in itself abnormal, considering the general trend of economic conditions at that time. The greater part (68%) of the Corporation's business in 1921 was satisfactory though suffering losses through the rapid decline in values, but these losses, if averaged into the period in which they justly belong, leave a satisfactory profit for these years as a whole.

Narrowing now to the smaller part (32%) of the business of 1921, involving only four Divisions now active, we find conditions accounting for 70% of the loans that were a matter of great concern during the winter of 1920–1921, and accounting for losses of $63,000,000. This localization of the source of trouble is a comfort for it reduces the likelihood of recurrence. There seems to have been no real necessity for the management of the Divisions involved in losses to have faced greater troubles than those experienced in other Divisions of the Corporation where conditions were satisfactory.

Three considerations make recurrence of the 1920–1921 disaster seem unlikely, if not impossible. First, it is very doubtful if the sharp decline in prices witnessed during that period will recur. The extreme rise was due to the war and deflation was more precipitate than ever before known. Second, a complete system of inventory and purchase control has been established in the Corporation. This system embraces a monthly statement of inventories and future commitments beyond which the Divisions are not permitted to proceed without specific authority. Under this system a shrinkage in business such as occurred in the years 1920–1921 could not result in a repetition of the inventory troubles of those years. Third, the system of consolidated cash control installed during the year 1922 makes possible more effective use of the funds of the Corporation.

The purpose of the above recital is to show definitely that the troubles of past years were not related to an ill-financed expansion program or to delay in receiving the proceeds of financing. It is quite certain that the funds provided before the close of the year 1920 were sufficient to carry out the whole program and also to finance new business offered during the year 1921 and the first half of the year 1922. It is equally certain that disregard for control of inventories and purchase commitments cost the Corporation a very large sum of money, of which the greater part might have been saved by proper safeguards in Divisions now differently managed. Further, it is important to the stockholders to know that the financial misfortunes of the Corporation in the past were only slightly related to the manufacture and sale of its products, but that these misfortunes were directly related to loose and uncontrolled methods which are now corrected.

Car, Truck, Accessory and Parts Divisions

Buick Motor Co. Division	Flint, Mich.
Cadillac Motor Car Co. Division	Detroit, Mich.
Chevrolet Motor Division	Detroit, Mich.
General Motors of Canada, Ltd.	Oshawa, Ont.
General Motors Truck Co. Division	Pontiac, Mich.
Oakland Motor Car Co. Division	Pontiac, Mich.
Olds Motor Works Division	Lansing, Mich.
A C Spark Plug Company *Spark Plugs and Speedometers*	Flint, Mich.
Brown-Lipe-Chapin Company *Differentials and Gears*	Syracuse, N. Y.
Dayton Engineering Laboratories Co. *Starting, Lighting and Ignition Sets*	Dayton, Ohio
Harrison Radiator Corporation *Radiators*	Lockport, N. Y.
Hyatt Roller Bearing Company *Roller Bearings*	Newark, N. J.
Jaxon Steel Products Company *Wheels, Rims, Tire Carriers and Rim Parts*	Jackson, Mich.
Klaxon Company *Warning Signals*	Newark, N. J.
Lancaster Steel Products Corporation *Special Steels*	Lancaster, Pa.
Muncie Products Company *Transmissions and Steering Gears*	Muncie, Ind.
New Departure Manufacturing Co. *Ball Bearings, Coaster Brakes, Bells and Bicycle Hubs*	Bristol, Conn.
Northway Motor & Mfg. Co. *Motors and Transmissions*	Detroit, Mich.
Remy Electric Company *Starting, Lighting and Ignition Sets*	Anderson, Ind.
Saginaw Malleable Iron Company *Malleable Castings*	Saginaw, Mich.
Saginaw Products Company *Motors, Steering Gears and Grey Iron Castings*	Saginaw, Mich.

All of these Divisions are active and in satisfactory shape for the production of high grade products at minimum cost. The Divisions are well balanced and need comparatively little further capital expenditure at present.

Fisher Body Corporation

In the year 1919 General Motors Corporation purchased for $27,600,000, three hundred thousand shares (60%) of the common stock of Fisher Body Corporation. The latter is now capable of producing all the closed car bodies needed by the several divisions of General Motors Corporation. The product is of the highest quality of workmanship and of durability. Design and finish are most acceptable so that the emblem with words "Body by Fisher" is now well appreciated by customers and is proving a very valuable asset.

To meet the growing demands of the industry, Fisher Body Corporation has recently sold an issue of $20,000,000 notes and offered for sale $7,500,000 of common stock at $75 per share. The latter has been underwritten without commission. These funds will permit the retirement of underlying bonds, bank loans and preferred stocks, approximately $15,500,000, leaving $12,000,000 for extension of Fisher Body Corporation facilities including working capital.

The Corporation is in very good position financially, its products are the best of their kind and its business is in very satisfactory condition.

At the close of 1921, General Motors Corporation had outstanding on account of its original acquisition of Fisher Body Corporation stock, Purchase Money Notes in the sum of $4,000,000, maturing at the rate of $1,000,000 annually, August 1, 1922 to August 1, 1925. During the year 1922 General Motors anticipated its notes maturing beyond 1923 in the sum of $3,000,000, thus leaving outstanding at the close of 1922 $1,000,000 which will be met at maturity August 1, 1923.

Research Laboratories

The Research Laboratories of the Corporation at Dayton, Ohio, are subject to generous appropriation for development and research in the field of the Corporation's operations. The result of this work is encouraging.

One development, the result of several years' study, has been introduced to the public as the "copper cooled" car of the Chevrolet Division. The engine of this car is cooled by means of copper fins brazed directly to the cylinder walls, thus doing away with radiator, water, pump, and water jacket. This feature attains great value in winter as the engine is free from troubles incident to cold weather and freezing; and also in summer or on

heavy roads, where the water cooled car is subject to overheating and consequent loss of water, the "copper cooled" car does not overheat or lose power. In addition, the engine is light and powerful and shows great fuel economy.

Delco-Light Company

This Division of General Motors Corporation is quite separate from the Dayton Engineering Laboratories D vision that manufactures ignition, lighting and electrical starting equipment for automobiles. The Delco-Light Company devotes its energies primarily to production and sale of lighting sets for houses, barns, etc., in districts not reached by public service corporations or other sources of electric current. The Company maintains 53 distributors and 3163 dealers. There are in use 175,000 Delco-Light Plants. The Company also manufactures and sells electrically driven pumps for both deep and shallow wells, and has taken over and brought to satisfactory development the "Frigidaire", electrically operated, iceless household refrigerator, formerly a separate division of General Motors Corporation. The Company has also developed a washing machine of very simple design. This machine, as well as Frigidaire, is satisfactorily operated from the power and lighting sets furnished by the Company or from public service current, direct or alternating.

The Company is doing good and profitable work and its products are increasing in popularity.

General Motors Acceptance Corporation

This Corporation was organized in the year 1919 in order to assist dealers in financing their purchases and sales of General Motors Corporation products. The success of the plan is best measured by the volume of business done. From inception to December 31, 1922, the Corporation has extended to GMC dealers over $337,000,000 of financial accommodation and by so doing has financed the purchase by dealers of 165,782 cars, trucks and tractors and the sale by dealers of 274,775 cars, trucks and tractors exclusive of other General Motors products and export shipments. The retail value of all products financed is in excess of $440,000,000. The Corporation has financed its business by the sale of its obligations, in every State of the Union, to over 1,500 banking institutions; numbered among these is nearly every important financial institution of the country. The loss experience of this Corporation is indicative of the care exercised

General Motors Corporation

EXECUTIVE COMMITTEE
(as of December 31)

Feb. 21, 1918	1918	1919	1920	1921	Term of Office
WPChrysler	WPChrysler	WPChrysler			2-21-18 to 3-25-20
RHCollins	RHCollins	RHCollins	RHCollins		2-21-18 to 1-13-21
WLDay	WLDay	WLDay	WLDay		2-21-18 to 1-13-21
WCDurant[1]	WCDurant[1]	WCDurant[1]	WCDurant[1]		2-21-18 to 1-13-21
JAHaskell	JAHaskell	JAHaskell	JAHaskell	JAHaskell	2-21-18 to 9- 9-23
EVerLinden	EVerLinden	EVerLinden	EVerLinden		2-21-18 to 1-13-21
FWWarner	FWWarner	FWWarner	FWWarner		2-21-18 to 1-13-21
	FWHohensee	FWHohensee	FWHohensee		6-27-18 to 1-13-21
	RSMcLaughlin	RSMcLaughlin	RSMcLaughlin		11- 7-18 to 1-13-21
	APSloanJr	APSloanJr	APSloanJr	APSloanJr	11- 7-18 to 5- 3-37
		HHBassett	HHBassett		(5- 1-19 to 1-13-21
					(9-25-24 to 10-17-26
			DPage		5-13-20 to 1-13-21
				PSduPont[1]	1-13-21 to 2- 7-29
				JJRaskob	1-13-21 to 8- 9-28

[1] Chairman

1922	1923	1924	1925	1926	Term of Office
JAHaskell					2-21-18 to 9- 9-23
APSloanJr	APSloanJr[1]	APSloanJr[1]	APSloanJr[1]	APSloanJr[1]	11- 7-18 to 5- 3-37
PSduPont[1]	PSduPont	PSduPont	PSduPont	PSduPont	1-13-21 to 2- 7-29
JJRaskob	JJRaskob	JJRaskob	JJRaskob	JJRaskob	1-13-21 to 8- 9-28
FJFisher	FJFisher	FJFisher	FJFisher	FJFisher	11-16-22 to 2- 5-34
CSMott	CSMott	CSMott	CSMott	CSMott	11-16-22 to 5- 9-29
		HHBassett	HHBassett		(5- 1-19 to 1-13-21
					(9-25-24 to 10-17-26
		DBrown	DBrown	DBrown	9-25-24 to 5- 3-37
		CTFisher	CTFisher	CTFisher	9-25-24 to 11- 5-34
		LPFisher	LPFisher	LPFisher	9-25-24 to 5- 3-37
		JLPratt	JLPratt	JLPratt	9-25-24 to 5- 3-37

[1] Chairman. A. P. Sloan, Jr. succeeded P. S. du Pont on May 10, 1923.

General Motors Corporation

EXECUTIVE COMMITTEE
(as of December 31)

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1927	1928	1929	1930	1931	Term of Office
APSloanJr[1]	APSloanJr[1]	APSloanJr[1]	APSloanJr[1]	APSloanJr[1]	11- 7-18 to 5- 3-37
PSduPont	PSduPont				1-13-21 to 2- 7-29
JJRaskob					1-13-21 to 8- 9-28
FJFisher	FJFisher	FJFisher	FJFisher	FJFisher	11-16-22 to 2- 5-34
CSMott	CSMott				11-16-22 to 5- 9-29
DBrown	DBrown	DBrown	DBrown	DBrown	9-25-24 to 5- 3-37
CTFisher	CTFisher	CTFisher	CTFisher	CTFisher	9-25-24 to 11- 5-34
LPFisher	LPFisher	LPFisher	LPFisher	LPFisher	9-25-24 to 5- 3-37
JLPratt	JLPratt	JLPratt	JLPratt	JLPratt	9-25-24 to 5- 3-37
		WSKnudsen	WSKnudsen	WSKnudsen	5- 9-29 to 5- 3-37
		JTSmith	JTSmith	JTSmith	5- 9-29 to 5- 3-37
			LduPont	LduPont	2- 6-30 to 2- 5-34

[1] Chairman.

1932	1933	1934	1935	1936[2]	Term of Office
APSloanJr[1]	APSloanJr[1]	APSloanJr[1]	APSloanJr[1]	APSloanJr[1]	11- 7-18 to 5- 3-37
FJFisher	FJFisher				11-16-22 to 2- 5-34
DBrown	DBrown	DBrown	DBrown	DBrown	9-25-24 to 5- 3-37
CTFisher	CTFisher				9-25-24 to 11- 5-34
LPFisher	LPFisher	LPFisher	LPFisher	LPFisher	9-25-24 to 5- 3-37
JLPratt	JLPratt	JLPratt	JLPratt	JLPratt	9-25-24 to 5- 3-37
WSKnudsen	WSKnudsen	WSKnudsen	WSKnudsen	WSKnudsen	5- 9-29 to 5- 3-37
JTSmith	JTSmith	JTSmith	JTSmith	JTSmith	5- 9-29 to 5- 3-37
LduPont	LduPont				2- 6-30 to 2- 5-34
		ABradley	ABradley	ABradley	8- 6-34 to 5- 3-37
			RHGrant	RHGrant	8- 5-35 to 5- 3-37
			OEHunt	OEHunt	8- 5-35 to 5- 3-37
			JDMooney	JDMooney	8- 5-35 to 5- 3-37
			CEWilson	CEWilson	8- 5-35 to 5- 3-37

[1] Chairman.

[2] No change to May 3, 1937.

General Motors Corporation

POLICY COMMITTEE
(as of December 31)

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May 3, 1937	1937	1938	1939	1940	Term of Office
ABradley	ABradley	ABradley	ABradley	ABradley	5- 3-37 to 6- 3-46
DBrown	DBrown	DBrown	DBrown	DBrown	5- 3-37 to 6- 3-46
WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	5- 3-37 to 6- 3-46
LduPont	LduPont	LduPont	LduPont	LduPont	5- 3-37 to 6- 3-46
WSKnudsen	WSKnudsen	WSKnudsen	WSKnudsen		5- 3-37 to 9- 3-40
APSloan,Jr[1]	APSloan,Jr[1]	APSloan,Jr[1]	APSloan,Jr[1]	APSloan,Jr[1]	5- 3-37 to 6- 3-46
JTSmith	JTSmith	JTSmith	JTSmith	JTSmith	5- 3-37 to 6- 3-46
GWhitney	GWhitney	GWhitney	GWhitney	GWhitney	5- 3-37 to 6- 3-46
CEWilson	CEWilson	CEWilson	CEWilson	CEWilson	5- 3-37 to 6- 3-46
				OEHunt	8- 5-40 to 6- 3-46

1941	1942	1943	1944	1945[2]	Term of Office
ABradley	ABradley	ABradley	ABradley	ABradley	5- 3-37 to 6- 3-46
DBrown	DBrown	DBrown	DBrown	DBrown	5- 3-37 to 6- 3-46
WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	5- 3-37 to 6- 3-46
LduPont	LduPont	LduPont	LduPont	LduPont	5- 3-37 to 6- 3-46
OEHunt	OEHunt	OEHunt	OEHunt	OEHunt	8- 5-40 to 6- 3-46
APSloan,Jr[1]	APSloan,Jr[1]	APSloan,Jr[1]	APSloan,Jr[1]	APSloan,Jr[1]	5- 3-37 to 6- 3-46
JTSmith	JTSmith	JTSmith	JTSmith	JTSmith	5- 3-37 to 6- 3-46
GWhitney	GWhitney	GWhitney	GWhitney	GWhitney	5- 3-37 to 6- 3-46
CEWilson	CEWilson	CEWilson	CEWilson	CEWilson	5- 3-37 to 6- 3-46

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1 Chairman.

2 No change to June 3, 1946.

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General Motors Corporation

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FINANCIAL POLICY COMMITTEE
(As of December 31)

June 3, 1946	1946	1947	1948	1949	Term of Office.
A Bradley[1]	A Bradley[1]	A Bradley[1]	A Bradley[1]	A Bradley[1]	6- 3-46 to date
DBrown	DBrown	DBrown	DBrown	DBrown	6- 3-46 to date
WSCarpenterJr	WSCarpenterJr	WSCarpenterJr	WSCarpenterJr		6- 3-46 to 6- 6-49
FGDonner	FGDonner	FGDonner	FGDonner	FGDonner	6- 3-46 to date
JLPratt	JLPratt	JLPratt	JLPratt	JLPratt	6- 3-36 to date
APSloanJr	APSloanJr	APSloanJr	APSloanJr	APSloanJr	6- 3-46 to date
JTSmith	JTSmith				6- 3-46 to 9-28-47
GWhitney	GWhitney	GWhitney	GWhitney	GWhitney	6- 3-46 to date
CEWilson	CEWilson	CEWilson	CEWilson	CEWilson	6- 3-46 to date
		ABEchols	ABEchols	ABEchols	12- 1-47 to date
				IduPCopeland	6- 6-49 to date

1950	1951	1952	Term of Office
ABradley[1]	ABradley[1]	ABradley[1]	6- 3-46 to date
DBrown	DBrown	DBrown	6- 3-46 to date
FGDonner	FGDonner	FGDonner	6- 3-46 to date
JLPratt	JLPratt		6- 3-46 to 1- 7-52
APSloanJr	APSloanJr	APSloanJr	6- 3-46 to date
GWhitney	GWhitney	GWhitney	6- 3-46 to date
CEWilson	CEWilson	CEWilson	6- 3-46 to date
ABEchols	ABEchols	ABEchols	12- 1-47 to date
IduPCopeland	IduPCopeland	IduPCopeland	6- 6-49 to date
HCAlexander	HCAlexander	HCAlexander	12- 4-50 to date
	HHCurtice	HHCurtice	1- 8-51 to date
		LDClay	1- 7-52 to date

[1] Chairman.

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General Motors Corporation

OPERATIONS POLICY COMMITTEE
(as of December 31)

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June 3, 1946	1946	1947	1948	1949	Term of Office
TPArcher	TPArcher	TPArcher	TPArcher		6- 3-46 to 8-10-49
ABradley	ABradley	ABradley	ABradley	ABradley	6- 3-46 to date
MECoyle	MECoyle	MECoyle	MECoyle	MECoyle	6- 3-46 to 12-31-50
HHCurtice	HHCurtice	HHCurtice	HHCurtice	HHCurtice	6- 3-46 to date
FGDonner	FGDonner	FGDonner	FGDonner	FGDonner	6- 3-46 to date
RKEvans	RKEvans	RKEvans	RKEvans	RKEvans	6- 3-46 to date
LCGoad	LCGoad	LCGoad	LCGoad	LCGoad	6- 3-46 to date
OEHunt	OEHunt	OEHunt	OEHunt		6- 3-46 to 9-30-49
CEWilson[1]	CEWilson[1]	CEWilson[1]	CEWilson[1]	CEWilson[1]	6- 3-46 to date
			BDKunkle		6- 7-48 to 3- 1-49
			FLBurke	FLBurke	8- 2-48 to 12- 9-50
			ERGodfrey	ERGodfrey	8- 2-48 to date

1950	1951	1952	Term of Office
ABradley	ABradley	ABradley	6- 3-46 to date
HHCurtice	HHCurtice	HHCurtice[2]	6- 3-46 to date
FGDonner	FGDonner	FGDonner	6- 3-46 to date
RKEvans	RKEvans	RKEvans	6- 3-46 to date
LCGoad	LCGoad	LCGoad	6- 3-46 to date
CEWilson[1]	CEWilson[1]	CEWilson[1]	6- 3-46 to date
ERGodfrey	ERGodfrey	ERGodfrey	8- 2-48 to date
MECoyle			6- 3-46 to 12-31-50
	JFGordon	JFGordon	1- 1-51 to date
	CHKindl	CHKindl	1- 1-51 to date
	HJKlingler	HJKlingler	1- 1-51 to date
	CROsborn	CROsborn	1- 1-51 to date
	SESkinner	SESkinner	1- 8-51 to date

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[1] Chairman.

[2] Appointed Acting Chairman on Dec. 1, 1952.

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Defendant's Exhibit (DP) No. 57

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Report of

GENERAL MOTORS CORPORATION

FOR THE

Calendar Year Ended December 31, 1922

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GENERAL MOTORS CORPORATION

224 West 57th Street
New York, N. Y.

General Motors Building
Detroit, Mich.

Officers

Pierre S. du Pont, *President*	Wilmington
Harry H. Bassett, *Vice-President*	Flint
Arthur G. Bishop, *Vice-President*	Flint
Donaldson Brown, *Vice-President*	New York
William L. Day, *Vice-President*	Pontiac
George H. Hannum, *Vice-President*	Pontiac
Alex B. C. Hardy, *Vice-President*	Lansing
J. Amory Haskell, *Vice-President*	New York
Charles F. Kettering, *Vice-President*	Dayton
R. Samuel McLaughlin, *Vice-President*	Oshawa, Ont.
James D. Mooney, *Vice-President*	New York
Charles S. Mott, *Vice-President*	Flint
John L. Pratt, *Vice-President*	New York
John J. Raskob, *Vice-President*	Wilmington
Herbert H. Rice, *Vice-President*	Detroit
Alfred P. Sloan, Jr., *Vice-President*	New York
John T. Smith, *Vice-President*	New York
Alfred H. Swayne, *Vice-President*	New York
Karl W. Zimmerschied, *Vice-President*	New York
Thomas S. Merrill, *Secretary*	Detroit
Meyer L. Prensky, *Treasurer*	Detroit
Frank Turner, *Comptroller*	Detroit

Finance Committee

John J. Raskob, *Chairman*

George F. Baker, Jr.
Donaldson Brown
Henry F. du Pont
Irénée du Pont
Lammot du Pont
Pierre S. du Pont
J. Amory Haskell
Seward Prosser
Alfred P. Sloan, Jr.
Edward R. Stettinius

Executive Committee

Pierre S. du Pont, *Chairman*

Fred J. Fisher
J. Amory Haskell
Alfred P. Sloan, Jr.
Charles S. Mott
John J. Raskob

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GENERAL MOTORS CORPORATION

Board of Directors

PIERRE S. DU PONT, *Chairman*

GEORGE F. BAKER, JR.
Vice-President, First National Bank,
New York, N. Y.

HARRY H. BASSETT
President, Buick Motor Co.,
Flint, Mich.

ARTHUR G. BISHOP
President, Genesee County Savings Bank,
Flint, Mich.

DONALDSON BROWN
Vice-President, in charge of Finances,
New York, N. Y.

ARTHUR CHAMBERLAIN
Director, Nobel Industries, Ltd.,
London, Eng.

WILLIAM L. DAY
President, General Motors Truck Co.,
Pontiac, Mich.

HENRY F. DU PONT
Director, E. I. du Pont deNemours & Co.,
Winterthur, Del.

IRÉNÉE DU PONT
President, E. I. du Pont deNemours & Co.,
Wilmington, Del.

LAMMOT DU PONT
Vice-President, E. I. du Pont deNemours & Co.,
Wilmington, Del.

FRED J. FISHER
President, Fisher Body Corporation,
Detroit, Mich.

GEORGE H. HANNUM
President, Oakland Motor Car Co.,
Pontiac, Mich.

ALEX B. C. HARDY
President, Olds Motor Works,
Lansing, Mich.

J. AMORY HASKELL
Vice-President, in charge of Advisory Staff,
New York, N. Y.

LOUIS G. KAUFMAN
President, Chatham & Phenix National Bank,
New York, N. Y.

CHARLES F. KETTERING
President, General Motors Research Corp.,
Dayton, Ohio

SIR HARRY MCGOWAN
Chairman, Nobel Industries, Ltd.,
London, Eng.

R. SAMUEL MCLAUGHLIN
President, General Motors of Canada, Ltd.,
Oshawa, Ontario, Can.

WILLIAM MCMASTER
President, Canadian Explosives, Ltd.,
Montreal, Can.

CHARLES S. MOTT
Vice-President, Director Advisory Staff,
Detroit, Mich.

SEWARD PROSSER
President, Bankers Trust Company,
New York, N. Y.

JOHN J. RASKOB
Vice-President, Chairman Finance Committee,
Wilmington, Del.

HERBERT H. RICE
President, Cadillac Motor Car Co.,
Detroit, Mich.

ALFRED P. SLOAN, JR.
Vice-President, in charge of Operations,
New York, N. Y.

JOHN T. SMITH
Vice-President, and General Counsel,
New York, N. Y.

EDWARD R. STETTINIUS
J. P. Morgan & Company,
New York, N. Y.

ALFRED H. SWAYNE
Vice-President, in charge of Banking Relations,
New York, N. Y.

WILLIAM H. WOODIN
President, American Car & Foundry Co.,
New York, N. Y.

CLARENCE M. WOOLLEY
President, American Radiator Corporation,
New York, N. Y.

OWEN D. YOUNG
Chairman, General Electric Company,
New York, N. Y.

KARL W. ZIMMERSCHIED
Vice-President,
New York, N. Y.

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REPORT TO THE STOCKHOLDERS

OF

GENERAL MOTORS CORPORATION

For the Calendar Year ended December 31, 1922

NEW YORK, MARCH 19, 1923

To the Stockholders:

The automobile industry is notable in having passed through three distinct phases in a brief period of three years and at the same time having transformed itself from a member of the luxury class to that of a prime necessity. To many the culmination of the period of inflated prices in the latter months of 1920 marked also the probable culmination of the wide demand for automobiles then commonly known as "pleasure cars." At that time growth in the use of automobiles was compared with and attributed to the period of inflation and extravagance brought about by the redistribution of wealth in the war years and those immediately following. Two years ago the term "pleasure car" applied to all cars excepting commercial vehicles, and properly described the then popular conception of the position of the automobile in modern life. The year 1920 witnessed the development of the automobile to its limit, as a supposed luxury, with the natural accompaniment of careless and extravagant production and sales methods.

Deflation, following in the year 1921, furnished two lessons: first, that the automobile, no longer a pleasure vehicle, had become a neces-

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sary tool—one which, as measured by its use in gasoline consumed, is not to be lessened in utility by the pinch of a severe financial and industrial readjustment; and, also, that the automobile, as shown by the registrations of 1921 and 1922, may be repaired and continued in use longer than normally expected. This first lesson was delivered not only to manufacturers but to the public in general. The second lesson applied more strictly to those catering to the public. It was to the effect that the manufacture and sale of the automobile as a commercial necessity must follow the same careful economic and resourceful methods as those found necessary in other standardized industries.

The development of the year 1922—a natural outcome of the year preceding—has dealt with the re-establishment of the automobile industry along sane lines and with the same aims that mark the successful conduct of other industries. To be sure, the effects of the past are not yet wholly blotted out, but the wave of reform has nearly overcome the mistakes of prior years. The future will have its problems, its inflations and depressions, but it is impossible to forecast a return to the critical conditions that have marked the regeneration of the industry during the three years now happily passed.

General Motors Corporation has followed the trend of the industry; its regeneration was necessary and it has been complete. Facilities for manufacture and sale have been revised, bettered and made more economical. Cars are more carefully designed, with a view to longer life, and greater economy in maintenance and operating costs. The aesthetic and useful have been studied in combination. System in management and control has been developed. In the year 1920 the Corporation may properly have been considered a maker of pleasure cars, to-day it furnishes economical transportation with appropriate comfort and appearance. To many this period of transformation has been one of doubt, fear and misgiving, confused by large and unfinished developments but to those of clearer vision the possibilities of a greater, stronger and more useful and prosperous corporation have been constantly in mind. To them the period of regeneration is distinct from and independent of the development of the Corporation as planned in earlier years.

Development Program

The Annual Report for 1920 made mention of the construction and expansion program of the years 1918, 1919 and 1920. At that time plans

in extending credits. Actual losses sustained, plus reserve to cover possible additional losses, show a loss ratio of about 3/10ths of 1%. The General Motors Corporation subscribed for and holds the entire capital stock of the General Motors Acceptance Corporation, amounting to $4,800,000. The surplus and undivided profits are $1,509,256. However, the Acceptance Corporation is in fact an independent banking institution, managing its own affairs and operating at a profit under principles consistent with sound banking practice and with the one actuating purpose of promoting a maximum distribution of General Motors Corporation products.

General Motors Building, Detroit

In the last Annual Report attention was called to the sale of $12,000,000 bonds of this Building for the purpose of repaying in part to General Motors Corporation the investment already made and for finishing the Building. The half of the Building first completed is now fully occupied and the non-occupied space is almost finished and ready for lease.

Housing Plans

During the war period the Corporation was obliged to build a number of dwelling houses at several points in order to accommodate its employes. A total of 1,633 houses were finished, of which 1,039 have been sold. The investment now stands at $6,274,782, consisting of 2,547 lots, 774 acres of residential real estate, and 521 houses. Of the latter 239 were rented December 31, 1922.

Acquisition of Brown-Lipe-Chapin Company Stock

General Motors Corporation has for some years past held a 22% stock interest in the Brown-Lipe-Chapin Company, Syracuse, New York, the largest manufacturers of differential gears in the world, and for years a source of supply for General Motors Divisions. At the close of 1922 the Corporation acquired the outstanding capital stock not already owned, paying therefor $1,725,200 in cash and $5,250,000 in Seven Per Cent Debenture Stock of the par value of $100. The increase in outstanding Seven Per Cent Debenture Stock appearing on the balance sheet December 31, 1922, is on account of this purchase.

Institutional Advertising

Two years ago the General Motors Corporation began a systematic effort to give publicity to its affairs through a series of communications to its stockholders.

The time has arrived to reach out to another audience—the employes of General Motors and its dealers, the 3,000 companies from which materials are purchased and the more than two million users of General Motors products. The most effective means of reaching this audience, and the general public of which it is a part, is through national advertising.

Accordingly, after much thought and study, a campaign was prepared for advertising in monthly publications having a nation-wide circulation and a second series of advertisements in business and financial publications. This institutional advertising appeared January, 1923, and will continue monthly. It tells the story of General Motors and is of a different character from the advertising of the manufacturing divisions.

Like every other important force, advertising works slowly; goodwill and public understanding are not won in a day. But as the months go by and the story of General Motors unfolds itself chapter by chapter, the average man and woman will have a much clearer understanding of the scope of General Motors Corporation, and of the force and logic in the union of its varying activities.

Bonus Plan

To induce employes of exceptional merit to remain with the Corporation over a period of years a Bonus Plan was adopted in 1918. As amended effective for the year 1922 and subsequent years, the Directors each year, after deducting 7% on capital employed, are authorized to set aside an amount equal to not more than 10% of net earnings to be placed in a Bonus Fund and invested in stock of the Corporation.

From this Bonus Fund employes of exceptional merit are awarded bonus in stock. At the time of award one-fourth of the stock is delivered and the remaining three-fourths held in trust to be delivered in equal installments at the end of each of the three following years. Dividends declared upon the stock held in trust are paid to the employes. Awards made under the Bonus Plan during the years 1918, 1919, 1920 and 1922

have been as follows: (No amount was available for distribution for the year 1921.)

7% Debenture Stock awarded	20,530 shares
Common Stock awarded	767,079 shares
Number of bonuses awarded	15,886

Number of Employes

The number of employes of the Corporation for 1922 and prior years has been as follows:

1909	14,250	1913	20,042	1918	49,118
1910	10,000	1914	14,141	1919	85,980
1911	11,474	1915	21,599	1920	25,333
1912	16,584	1916	25,666	1921	35,931
		1917	25,427	1922	75,214

These figures do not include the employes of the affiliated companies.

Savings Plan

The continued response by employes to the opportunity for thrift under the Corporation's Savings and Investment Plan, inaugurated in 1919, is gratifying.

Employes are permitted to pay in 10% of their wages or salaries not to exceed $300 in any year. Interest is credited semi-annually at 6%. Employes may withdraw their savings and interest at any time. Under the original plan the Corporation agreed that if savings remain undisturbed for a period of five years it would match dollar for dollar the savings of the employes. Under the amended plan the Corporation agrees to contribute fifty cents for every dollar paid in by the employes. A summary of the results of this savings fund follows:

Year Ended Dec. 31	Amount Paid in by Employes	Amount Paid in by Corporation	Accumulation of Interest, and Income from Investment	Aggregate Receipts	Withdrawals by Employes	Net Amount in Fund
1922	$ 2,598,090	$ 1,143,977	$ 644,576	$ 4,386,643	$ 849,898	$ 3,536,747
1921	2,603,090	2,162,565	603,801	5,369,456	2,376,157	2,993,299
1920	4,502,185	4,502,185	382,476*	9,386,846	2,758,781	6,628,064
1919	2,249,065	2,249,065	22,907	4,521,037	179,382	4,341,654
	$11,952,430	$10,057,792	$ 1,653,760	$23,663,982	$ 6,164,218	$17,499,764

* In addition to this amount, which was received in cash, there was also received as a stock dividend 12,604 39/40th shares of General Motors Corporation Common Stock.

This net amount, $17,499,764, is the accumulated "Savings" of employes now interested in the plan.

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Number of Stockholders

At the end of 1922 there were 65,665 stockholders. Of the 44,000 common stockholders, 37,000 owned less than 100 shares and 13,000 owned 10 shares or less. One-fourth or 11,244 of the stockholders are women.

A comparison of the total number of stockholders of all classes by quarters follows:

Year Ended Dec. 31	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
1917	1,927	2,525	2,669	2,920
1918	3,918	3,737	3,615	4,739
1919	8,012	12,523	12,358	18,214
1920	24,148	*26,136	31,029	36,894
1921	49,035	59,059	65,324	66,837
1922	70,504	72,665	71,331	65,665

* In January, 1920, stockholders authorized the exchange of one share of Common stock, par value $100, for 10 shares of Common stock without par value, the first exchange having been made March 1, 1920.

Progressive Growth

The growth of the Corporation during recent years is not shown completely in the total of cars and trucks sold, as the sales of accessories and other goods, and the manufacture of parts for its own consumption have added greatly to the volume of business. On the other hand, the net volume of sales does not give a very accurate measure of increased business due to the recession of prices during the two years past; however, both records are given below:

Number of Passenger Cars, Commercial Cars, Trucks and Tractors Sold

1918	246,834
1919	391,738
1920	393,075
1921	214,799
1922	456,763

Net Sales, All Products Manufactured

1918	$269,796,830
1919	509,676,695
1920	567,320,604
1921	304,487,243
1922	463,706,733

Dividends

The regular dividends on the Debenture and Preferred stocks have been paid during the year 1922. A detailed record of the quarterly dividend payments during the year ended December 31, 1922, is as follows:

7% Debenture Stock	6% Debenture Stock	6% Preferred Stock	Date of Payment	Stock of Record
$1.75	$1.50	$1.50	Feb. 1st	Jan. 14th
1.75	1.50	1.50	May 1st	Apr. 7th
1.75	1.50	1.50	Aug. 1st	July 3rd
1.75	1.50	1.50	Nov. 1st	Oct. 9th

Dividends on the Debenture and Preferred stocks have been paid regularly since the stocks were issued, as follows: The 6% Preferred has paid $1.50 a share quarterly, $6 a share a year, since February 1, 1917. The 6% Debenture has paid $1.50 a share quarterly, $6 a share a year, since February 1, 1919. The 7% Debenture has paid $1.75 a share quarterly, $7 a share a year, since May 1, 1920.

The initial dividend on the no par value common stock was 25 cents cash and a stock dividend of 1/40th of a share of common paid May 1, 1920, which rate was also paid on August 2 and November 1, 1920. During 1921 the dividend was at the rate of $1 per share per annum, payable 25 cents quarterly upon the first of February, May, August and November. During 1922 no quarterly dividends were paid but at a meeting of Directors held November 16, 1922, there was declared a "special" dividend of 50 cents a share on the common stock payable December 20, 1922, to stockholders of record November 27, 1922.

Present Position

The present position of the Corporation is one of great strength. The plants are, with few exceptions, modern and the greater part new. Machinery is quite up to date. Each of the six car manufacturing divisions has sufficient capacity to operate at lowest cost and the sales organizations are in strong position. The Corporation owns complete plants for manufacturing essential accessories and has a research and development division extraordinarily well equipped, both as to apparatus and personnel. Working capital is sufficient for present production. The organization is well developed and is operating with great harmony and co-operation.

Financially the situation is satisfactory. The current and working assets as of December 31, 1922, amounted to $180,239,160, consisting of cash, sight drafts, notes and accounts receivable, materials, etc., substantially all of which liquidate in four months or less. Against these assets there is no indebtedness in the form of notes or bank loans, and the only fixed indebtedness consists of $2,279,750 purchase money notes and mortgages. Current liabilities amount to $53,762,923, of which $16,166,564 is for accrued taxes, payrolls and sundries not due. Debenture and preferred stocks, of which there is a total outstanding at the close of the year of $109,166,000, are secured by net current and working assets (i. e., current assets with all liabilities deducted, including purchase money notes and mortgages) of $124,196,487. In addition there is $291,267,967 permanent investment, exclusive of plant depreciation fund, or a total of assets less liabilities of $415,464,454, equal to 3.8 times the par value of the debenture and preferred stocks outstanding. Incidentally it may be remarked that the annual dividend on the present total issue of Debenture and Preferred Stocks has been earned every calendar year from 1912 to date, a period of eleven years, excepting the year 1921, when the earnings, exclusive of extraordinary adjustments, of the normally operated divisions were equal to more than three times the present Debenture and Preferred dividend requirements. The earnings of four years, 1919 to 1922 inclusive, even after all extraordinary adjustments and losses, average four times the present Debenture and Preferred dividend charge.

The financial statement of the Corporation may be considered remarkably clean. Current assets are, undoubtedly, liquid and written at conservative values. Investments are worth more than cost (the latter figure is used in this statement). Plant values were subject to appraisal and adjusted in 1919.

Goodwill, Patents, Copyrights, etc.

The item of "Goodwill, Patents, Copyrights, etc.", has increased only $2,046,922 since 1919 to a present total of $22,370,811. From this it must not be concluded that this account is considered of small or doubtful value; in fact, these intangible values might be rated, conservatively, equal to the manufacturing plants, for of the two items it would be much easier to replace the latter than to build up the goodwill and organization now enjoyed and controlled by General Motors Corporation. The co-ordination of departments and facilities, the development of accounting practice and prompt reporting on all subjects, the systematizing of manufacture and sales, the selection of a sufficient and capable personnel, the

loyalty and effectiveness of sales and manufacturing organizations, all developed during recent years, have added greatly to the goodwill value of the tangible assets; in fact, the latter would quickly return to lifeless materials were it not for the livening influence of the intangible values classed as goodwill. However, these intangibles remain without material increase in their expressed values on the balance sheet, after several years of painstaking development.

Personnel

In closing it is appropriate and just to pay tribute to the zealous co-operation, loyalty and hard work of the organization as a whole. While much has been accomplished, partly under adverse circumstances, the way is now paved for greater accomplishment and to this end all are turning their best efforts.

By Order of the Board of Directors.

Pierre S. du Pont
President

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GENERAL MOTORS CORPORATIO

Condensed Comparative Consolidated Balance

ASSETS	Dec. 31, 1922	Dec. 31, 1921
Current and Working Assets:		
Cash in banks and on hand	$ 27,872,722.92	$ 40,057,401.53
United States Government Bonds	3,950.00	5,228.04
Marketable securities	29,618.10	27,009.31
Sight drafts against B/L attached and C. O. D.	13,179,664.05	4,677,241.39
Notes receivable	4,455,042.33	4,794,978.99
Accounts receivable and trade acceptances, less reserve for doubtful accounts (in 1922, $1,431,143.55; in 1921, $1,078,772.26)	15,921,934.93	17,866,071.83
Inventories at cost or market, whichever is lower:	*117,417,823.05	108,762,625.35
Prepaid expenses	1,358,404.98	1,944,988.35
Total Current and Working Assets	$180,239,160.36	$178,135,544.79
Fixed Assets:		
Investments in allied and accessory companies, etc.	$ 57,293,864.72	$ 56,377,031.68
General Motors Corporation common and debenture stock held in treasury	3,275,432.65	3,889,799.51
Real estate, plants and equipment	255,207,970.82	248,593,751.60
Deferred expenses	3,947,794.49	4,609,677.87
Goodwill, patents, copyrights, etc.	22,370,811.06	22,438,401.22
Total Fixed Assets	$342,095,873.74	$335,908,661.88
TOTAL ASSETS	$522,335,034.10	$514,044,206.67

* At some plants demand for product precluded shut-down for taking physical inventory. At such points book values are used, careful scrutiny having led to the conclusion that these values are conservative.

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D SUBSIDIARY COMPANIES

Sheet as of December 31, 1922 and 1921

LIABILITIES, RESERVES AND CAPITAL	Dec. 31, 1922	Dec. 31, 1921
Current Liabilities:		
Accounts payable	$ 34,812,441.20	$ 15,640,429.41
Notes payable	—	48,974,996.29
Taxes, payrolls and sundries accrued not due	16,166,563.70	15,894,778.40
Federal taxes	1,650,821.93	—
Accrued dividends on preferred and debenture stock, payable February 1	1,133,096.23	1,043,763.07
Total Current Liabilities	$ 53,762,923.06	$ 81,553,967.17
Purchase money mortgages ($100,602.12 due in 1923)	$ 1,279,750.12	$ 1,475,592.82
Purchase money notes, account Fisher Body Corporation stock purchase ($1,000,000.00 due August 1)	1,000,000.00	4,000,000.00
	$ 2,279,750.12	$ 5,475,592.82
Reserves:		
For depreciation of real estate, plants and equipment	$ 50,827,907.11	$ 37,527,774.94
For employes' investment fund	1,143,962.50	2,171,885.00
For sundry contingencies	7,016,667.35	3,139,579.72
For bonus to employes	1,344,098.70	17,630.87
For anticipated losses and unforeseen contingencies of prior years	—	14,000,000.00
For completion of office building	—	2,499,261.00
Total Reserves	$ 60,332,635.66	$ 59,356,131.53
Capital Stock:		
Debenture stock 7%	$ 32,181,600.00	$ 26,931,600.00
Debenture stock 6%	60,801,000.00	60,801,000.00
Preferred stock 6%	16,183,400.00	16,183,400.00
Common stock, no par value: 20,557,750 shares issued and outstanding at $10.00 per share	205,577,500.00	206,456,575.25
Common stock ($100 par value)	700.00	7,400.00
Total Capital Stock	$314,744,200.00	$310,379,975.25
Interest of minority stockholders in subsidiary companies with respect to capital and surplus	1,279,662.18	1,464,379.44
Surplus over and above $10.00 per share of no par value common stock	89,936,863.08	55,814,160.46
Total Capital Stock and Surplus	$405,959,725.26	$367,658,515.15
TOTAL LIABILITIES, RESERVES AND CAPITAL	$522,335,034.10	$514,044,206.67

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Statement 2

GENERAL MOTORS CORPORATION AND SUBSIDIARY COMPANIES

INCOME ACCOUNT

	Year Ended Dec. 31, 1922	Year Ended Dec. 31, 1921
Net earnings for year before deducting interest, but after all expenses of manufacturing (including maintenance), selling and administration, as well as ordinary taxes, insurance, depreciation ($13,584,788.95 in 1922; $6,750,674.54 in 1921) of plant and equipment	$ 66,781,613.52	$ 13,246,523.30
Less: Provision for employes' bonus	$ 1,341,997.52	—
Provision for employes' savings and investment fund	1,477,216.28	$ 2,174,080.00
Interest on notes and accounts payable	1,351,155.40	5,281,084.67
	$ 4,170,369.20	$ 7,455,164.67
	$ 62,611,244.32	$ 5,791,358.63
Less: Write-down of inventories to cost or market, whichever is lower (in 1922 carried direct to operations in accordance with usual practice)	—	$ 16,603,073.25
Employes' housing development	—	5,600.00
Provision for refunds due dealers and distributors on account of price reduction effective January 1, 1922	—	2,441,376.07
Adjustments and losses in excess of reserve created at the close of previous years	$ 4,553,796.10	11,421,102.78
	$ 4,553,796.10	$ 30,471,152.10
	$ 58,057,448.22	*$24,679,793.47
Less: Provision for Federal taxes and extraordinary expenses	6,250,000.00	—
	$ 51,807,448.22	*$24,679,793.47
Less: Special reserve established December 31, 1921, to cover anticipated losses and unforeseen contingencies	—	14,000,000.00
	$ 51,807,448.22	*$38,679,793.47
General Motors Corporation proportion thereof	$ 51,496,135.65	*$38,680,770.05
Debenture dividends at rate of 7%	$ 1,860,936.41	$ 1,807,490.09
Debenture dividends at rate of 6%	3,597,570.05	3,531,515.50
Preferred dividends at rate of 6%	970,721.50	971,004.00
	$ 6,429,227.96	$ 6,310,009.59
Amount earned on Common stock	$ 45,066,907.69	*$44,990,779.64

* Deficit

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Statement 3

SURPLUS ACCOUNT

	Year Ended Dec. 31, 1922	Year Ended Dec. 31, 1921
Surplus over and above $10.00 per share of outstanding no par value Common stock at the beginning of the year	$ 55,814,160.46	$121,273,217.00
Additions through acquisition of properties	117,111.93	—
Deduction account of cancellation of delinquent Common stock subscriptions	*884,200.00*	—
Amount earned on Common stock as per income account above	45,066,907.69	* *44,990,779.64*
	$100,113,980.08	$ 76,282,437.36
Less: Cash dividends paid on Common stock		
February 1, $0.25 share	—	$ 5,087,110.40
May 1, .25 share	—	5,143,836.00
August 1, .25 share	—	5,119,159.25
November 1, .25 share	—	5,118,171.25
December 20, .50 share	$ 10,177,117.00	—
	$ 10,177,117.00	$ 20,468,276.90
Surplus over and above $10.00 per share of outstanding no par value Common stock December 31	$ 89,936,863.08	$ 55,814,160.46

*Deficit

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ATLANTA
BALTIMORE
BOSTON
BUFFALO
CHICAGO
CINCINNATI
CLEVELAND
DALLAS
DENVER
DETROIT
KANSAS CITY
LOS ANGELES
MINNEAPOLIS
NEWARK
NEW ORLEANS

HASKINS & SELLS
CERTIFIED PUBLIC ACCOUNTANTS
NEW YORK

NEW YORK
PHILADELPHIA
PITTSBURGH
PORTLAND
SAINT LOUIS
SALT LAKE CITY
SAN FRANCISCO
SEATTLE
TULSA
WATERTOWN

HAVANA
LONDON
PARIS
SHANGHAI

GENERAL MOTORS CORPORATION,
Detroit, Michigan.

We have audited your general accounts and those of your subsidiary manufacturing companies for the year ended December 31, 1922, and, subject to our not having examined the minutes of your governing bodies,

WE HEREBY CERTIFY that, in our opinion, the accompanying Condensed Consolidated Balance Sheet, December 31, 1922, and related Summaries of Income and Surplus for the year ended that date, are correct.

HASKINS & SELLS.

New York,
February 23, 1923.

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Defendant's Exhibit (DP) No. 58 P-60

5698

GENERAL MOTORS CORPORATION
Excerpt of Meeting of Executive Committee
New York City

March 15, 1921

Present: P. S. duPont
J. A. Haskell
J. J. Raskob
A. P. Sloan, Jr.

• • •

TESTS OF NEW PRODUCTS:

The following resolution was offered and unanimously carried:

WHEREAS, in the judgment of this Committee it is not only eminently proper but absolutely essential that an independent engineering test should be conducted on every new piece of apparatus under development or a major change on any piece of apparatus in production by any Division or Subsidiary before any commitments are made other than experimental commitments, and

WHEREAS, this Committee feels it is essential that a method of procedure should be adopted in order to reduce to the minimum losses in connection with the developing and marketing of new products,

NOW THEREFORE, BE IT RESOLVED, that the following method of procedure be outlined and that same be presented at the next meeting of the Operations Committee for its information and guidance, and for any further recommendations that the Operations

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Committee may wish to make, with a view to a better method, if possible, of effecting the desired result:

1. That upon the completion of preliminary sketches the Research Section of the General Staff be duly advised and have an opportunity to make such suggestions as in their judgment may be deemed proper for the benefit of the Operating Division.

2. That a sufficient number of experimental models be developed, having in view the testing of such models not only by the Operating Division but concurrently by the Research Section of the General Staff.

3. That on the completion of such tests a report be submitted by the Director of the Research Division to the General Manager of the Operating Division, such report setting forth in reasonable detail, the result of the Research Section's analysis of the product and approval of its performance or recommendations, if any, as to changes.

4. That upon the submission of this report the General Manager of the Operating Division or anyone deputized by him should, in a conference with the Research Section, agree upon such recommendations as they can agree on and disagree on such as they cannot agree on and the complete report so developed be submitted for consideration.

5. That after an analysis has been made of the report so submitted, the Operating Vice President will advise the Operating Division as to what changes, if any, in his judgment are essential to protect the Corporation's interests.

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E

Defendant's Exhibit (DP) No. 59 5700

GENERAL MOTORS CORPORATION

Meeting of Executive Committee
New York City

September 13, 1921

PRESENT: P. S. duPont
J. J. Raskob
A. P. Sloan, Jr.

* * *

QUALITY OF CARS NOW MANUFACTURED BY GENERAL MOTORS CORPORATION.

Report was received from the President, dated September 8, 1921, dealing with the line of cars now manufactured by the Corporation and the question of continuing or discontinuing certain models. After full discussion of this subject, the following resolution was offered and unanimously carried:

WHEREAS, The President has submitted a report to the Executive Committee in which he calls attention to the necessity of adopting certain fundamental principles to be observed in the planning of our line of cars to be manufactured in the future, and feels, among others, that the following principles should be enunciated:

1. That each car shall be designed to be manufactured as cheaply or more cheaply than competitive cars in the same class.

2. That all parts shall be carefully studied to decrease weight, add strength and durability, and improve quality of performance.

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3. That no novel features shall be introduced without most exacting test.

4. That each new design accepted shall embody salient features of appearance, comfort, use and performance equal to and, in some particulars at least, better than similar features existing in competitive cars.

5. That no car of new design shall be put on the market without having gone through a standard 25,000 miles test under the direction of the Dayton Laboratories, and the results thereof reported to the Executive Committee.

6. That a car design once established shall not be changed in a manner to increase cost (i.e., to raise the car toward a higher class). Costs shall be maintained or lowered unless increase in base value of material or labor demands an increase in cost without change in design.

NOW, THEREFORE, BE IT RESOLVED, That a copy of this resolution be forwarded to each Division Manager, with the request that he be prepared to discuss this matter at the next meeting of the Car Division Managers with the Executive Committee, with the view to determining exactly what fundamental principle should be adopted to govern our future manufacturing policy, and that each Division Manager report to the Executive Committee as to how far the cars now being constructed measure up to the principles named.

BUICK.

Referring to the comments of the President in his report regarding the Buick Division, it was moved and unanimously carried that the President be requested to discuss with the

Buick management the best ways and means of insuring the continued success of the Buick car.

—3—

CADILLAC.

Referring to the President's remarks on Cadillac, action on this matter was deferred, awaiting report now being prepared by the Cadillac management on the subject of future Cadillac production.

CHEVROLET.

The following motion was offered and unanimously carried:

WHEREAS, The President has transmitted a report giving his views as to the development of Chevrolet design and production for the future, in which the ideas of the Executive Committee concur;

NOW, THEREFORE, BE IT RESOLVED, That this matter be discussed with Messrs. Kettering and Zimmerschied, with a view to reaching final conclusions.

OAKLAND.

The following motion was offered and unanimously carried:

WHEREAS, The President has transmitted a report giving his views as to the development of Oakland design and production for the future, in which the ideas of the Executive Committee concur;

NOW, THEREFORE, BE IT RESOLVED, That this matter be discussed with Messrs. Kettering and Hannum, with a view to reaching final conclusions.

OLDS.

Referring to the President's remarks on the Olds product, this question was discussed, but no definite action taken.

* * *

Defendant's Exhibit (DP) No. 60

March 8, 1918.

H. E. Ellsworth, Esquire,

Simsbury, Connecticut.

5704

Dear Sir:

Nothing would have pleased me more than the frank letter you have written in regard to the bonus question, coupled with the enclosure of your proxy upholding the acts of the management of the DuPont Company.

It is difficult to put in writing a brief statement that will show merits of our bonus system. Undoubtedly the success of the company in recent years has been due to the activity of the leading men, not necessarily the officers and directors, but all the men whose leadership and example, devotion to duty and willingness to serve beyond the value of salary paid to them, has brought about a condition where the lesser men have been stimulated to great effort and where results have been accomplished far beyond any reasonable expectation of the stockholders. All of us realize that the success of the company has been phenomenal. The opportunity for achievement has been open to many in recent years. Few have tried and in our line of those who have tried several have failed. I believe that our bonus plan has been one of the most powerful instruments in winning out. We had in our organization at the beginning of the war a nucleus of men representing the best talent in their line. Not one of them has deserted the company, though flattering offers of salary

P S DU PONT

and participation in profits were open to all of them. Many if not all of these men were not substantial stockholders. Few of them had stock in our company other than that which had been won by them under the operations of our bonus plan. But for the latter we could not have expected these men to stay with us, sacrificing their personal interests and fortunes and I, as resident of the company, should have been obliged to advise the best men we have to seek other and more remunerative positions.

The leading men in the company are appropriately numbered among the officers and directors, to them greatest credit is due, therefore it is to them that the greatest awards have been made. They have won and magnificiently, who would not have offerred to give them double their salary and bonus for the production of such results had they been foreseen.

It has been my fortune to be at the head of our company during this war period. Throughout I have been a stockholder of moment. Therefore I have been an interested party in every way. Had it not been for the bonus plan or some similar method of attracting, holding and rewarding men of merit I should have refused not only to have undertaken the work which has produced such wonderful results, but should have used my influence as director and stockholder to oppose an undertaking which would have been impossible of completion without the services of the great number of capable men whom

PSDU PONT

the bonus plan has held to us.

Our company has never paid high salaries to its officers and principal men. The salary of the president has been $30,000. a year since 1904. This is the highest salary that has ever been paid. The compensation of other officers and leading men is less, but in appropriate proportion. I am a great believer in paying reasonable salaries with very substantial added compensation for successful results. This is the plan under which we work and under which our record has been made.

As a stockholder I should prefer increasing the bonus distribution rather than to reduce it in any way.

I have written this letter to show you how earnestly I support our bonus plan, also to show you that while I appreciate your loyalty to the management I want added to this loyalty your approval and support of the most potent feature in the company's success.

Sincerely yours,

P S DU PONT

14

Defendant's Exhibit (DP) No. 61

March 16, 1937

5707

Mr. Lammot du Pont,

Building.

Dear Lammot:

Thanks for your congratulatory letter of March 10th. While I had a break in my employment with E. I. du Pont de Nemours & Company for a period of three years, 1899-1902, I have always felt that these years were better spent in the service of the company than a number of others, so that I look at my connection with the company as one of 47 years. However, technically you are quite right.

It has been, as you say, a period of wonderful development and expansion but far from a one man job. As Barksdale once said, very wisely, in computing the assets of the corporation, he would value the organization as worth more than the bricks, mortar and working capital.

In bringing about the result, the plan of awards to competent men has certainly worked out to the best advantage. To my mind it has been uppermost in achieving the company's great success. I hope that there may be many more years of such continued enlightened management.

Again thanking you, I remain

Sincerely yours,

P S DU PONT

18

3431

C100

E.

Defendant's Exhibit (DP) No. 62

5708

E. I. DU PONT DE NEMOURS & COMPANY
(INCORPORATED)

WILMINGTON, DELAWARE

VICE-PRESIDENT

July 23, 1923.

Mr. P. S. du Pont,
Building.

My dear P.S.:

Yours July 19th:

Ferd La Motte assures me that the du Pont Company does not divide orders for Raw Materials for the purpose of having two sources of supply, and that the only instance where we buy the same commodity from two people is when one supplier is not able to care for our total requirements.

While the loss of 25% of the Chevrolet top business seemed a little cruel, because of our having waived a very large sum due us under our 1920 contract; because of having given them splendid service and quality and having met their unusual and unexpected heavy requirements during 1922,—buying gray goods at the market because our commitments were not heavy enough to meet their demands, and not charging them for the difference between the market and our contract price; expressing many shipments and not charging them the difference between express and rail rates; perhaps there is some justification for Mr. Knudsen's attitude, in the fact that we have but one Plant and if anything serious happened to it his production might be inter-

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5709

fered with, although I have no hesitancy in saying that we would take care of him in some way, even if we had to buy from our competitors, because the rubber manufacturing facilities are nearly double the requirements.

/s/ Wm. Coyne
Vice President

WC/emm

3433

Defendant's Exhibit (DP) No. 63 5710

Return to
(name illegible)

March 18th, 1921.

R. H. Collins, General Manager,
Cadillac Motor Car Co.,
Detroit, Michigan.

My dear Mr. Collins:—

I have delayed answering your letter of January 20th as it seemed unnecessary to do so during your absence, but I do wish to write you frankly on the subject of the withdrawal account of $280,000. I shall be quite frank in what I say and hope you will take my remarks in good spirit and correct me if I seem to be wrong.

To be brief in my point, I do not like this action nor do I think it a proper one for officers of General Motors Corporation. To be equally brief on the other side, I realize fully that you are acting according to custom of the past and evidently in the belief that I expected such action. From these two brief statements you will realize that I have no criticism of what has happened, but desire your cooperation in avoiding a recurrence of similar action, either in your Division or elsewhere. When you spoke of a possible withdrawal of a large amount of cash, and then refrained from further reference to the matter without having reached a decision with me, I understood that the question had been dropped by you, although I was apparently not warranted in this assumption. In our failure to understand each other, I am equally at fault with you. As to the particular act of withdrawal of so large a sum in cash, do you not agree with me that it is highly inadvisable to permit any man in General Motors, from the President down, to withdraw so large a sum for personal use on his own signature or approval?

J-54

3434

I have had in mind to recommend that all such withdrawals, as well as payments of salaries of the Heads of Divisions, be made from a main office account, on properly approved authority. This has been brought to mind as applying to my own position more than any other.

—2—

As to the amount of your withdrawal, it seems to me in excess of the annual compensation which will be allotted you under any understanding that may exist as to 1920 payment. I understand that this amount of $280,000. is over and above the $150,000. drawing account, making a total of $430,000. It has been my understanding that although the new form of contract was not signed by you, its terms were accepted with the possible exception of the payment in stock. Perhaps you have figured the account accurately for 1920 and know that you are within bounds. I am judging by a rough statement made in November which may prove inaccurate.

While writing this letter my attention has been called to yours of January 17th, 1921 to Mr. Sloan. That letter might be construed to mean that you consider the 1917 arrangement in force during the year 1920. This is not my understanding, as my conversation with you and other correspondence indicates that you agree with me, though you would be willing to reinstate the 1917 arrangement. However, in view of your letter of January 17th, I think it important that I should record definitely that neither Messrs. Durant, Sloan, Haskell nor myself believe that any arrangement other than that embodied in Mr. Durant's letter of January 2nd, 1919 is now in force, and that the only possible modification heretofore claimed by you is that relating

to continuation of the stock payment in event of your leaving the company's service through your own volition.

This is a long letter, but I hope it will serve to draw out your views on the principles involved, taking as a text your action, which, as I said above, remains an open question until I see you on your next trip to New York at which time we can discuss the details.

Very truly yours,

1/* President.

Defendant's Exhibit (DP) No. 64 5713

May 11th, 1921.

To: FINANCE COMMITTEE

FROM: P. S. DU PONT.

On January 27th, 1921, the Finance Committee authorized the writer to enter into contracts with several managers of the principal divisions of the corporation covering compensation for the year 1921. Because of the uncertainty as to retaining Messrs. Collins and Warner as heads of divisions, it was thought inexpedient to press the closing of these contracts, particularly as the terms thereof did not differ materially from the existing arrangement, automatically in force for the year 1921. However, contracts have been closed with Messrs. Bassett and Craig. Messrs. Collins and Warner are retiring from their positions as division managers and will be paid up to date of retirement, in accordance with the terms of the 1920 arrangement.

There remain contracts to be closed with the following:

E. VerLinden,
K. W. Zimmerschied,
W. L. Day,
A. H. Sarver,
DeWitt Page.

While treating this subject I wish to call attention to the fact that three of the managers of our five leading manufacturing divisions, namely, Messrs. Hohensee, Collins and Warner, have arranged to leave the service of the corporation, and that Mr. Verlinden seems far from satisfied with compensation arrangements. To lose four out of five leading men during the first six months of a new administration

J-55

3437

is a fact worthy of note and of careful thought, and frank discussion of the Finance Committee on this subject is invited.

In this connection two occurrences should be brought to the attention of the Finance Committee:—

First, during the early part of January, 1921, Mr. Collins informed the writer that he required a considerable sum of money to liquidate certain personal accounts and suggested that he draw $240,000 in advance of settlement of compensation for the year 1920. The suggestion was not approved, nor was there positive refusal to concur in the request. Under the writer's previous experience in business affairs it was not supposed that a transaction involving so much money would be carried out without very positive authority. It was therefore quite surprising to receive a letter under date of January 20, 1921, to the effect that Mr. Collins had drawn $280,000,—$40,000 more than originally contemplated. Mr. Collins left immediately for a trip to California, so it was not until March 18th that a letter frankly criticizing his act was forwarded and discussion of the subject requested. Meantime the Executive Committee had been told of the transaction in question and had authorized the President to handle the matter of settlement. On April 6th, Mr. Collins came to New York. A note made immediately after his departure appears on the record as follows: "Early in the day Mr. Collins told me that the money withdrawn by him during the early part of the year had been returned to Cadillac immediately upon receipt of my letter". Recently I have been surprised to find that the repayment of money withdrawn referred to a further withdrawal of $211,000, which Mr. Collins needed for the payment of his taxes. This action was also without authorization, so that the total withdrawals amounted to $491,000, although, as above

noted, $211,000 has since been returned. In the meantime, there has been quite active discussion with Mr. Collins in regard to his compensation for the year 1920. On April 17th of that year he wrote to Mr. Durant and referring to a certain date, said "at which time my contract with you, providing for 5% of the Cadillac

profits, was annulled and superseded by the arrangement now under discussion." (This arrangement has reference to the existing form of contract with the division managers, which contract has not been formally signed by Collins.) Recently Collins has claimed that he is not working under the "arrangement", but is entitled to 5% of the Cadillac profits for the year 1920. The writer has refused to consider this claim and intends to insist on the repayment of $280,000 wrongfully withdrawn from the Cadillac Company, or to the application of this sum to the final adjustment of Collins's compensation.

The second incident referred to relates to the compensation of Mr. VerLinden. In discussing with him the question of renewal of contract for the year 1921, it was understood that he accepted an offer of a salary of $1[illegible]0,000 in cash, with further compensation under the general bonus plan of the corporation without definite contract. On April 28th this understanding was confirmed to him, but VerLinden replied under date of May 5th that "in the absence of any formal written contract specifically applying to this year, my old contract having continued over the first of the year, is the contract under which I am working and will be so construed by me." In the meantime VerLinden has been invited to discuss the calculation of compensation for the year 1920 and has arrived at a figure approximating $140,000 in addition to salary of $100,000, whereas the Treasurer's calculation calls for an extra payment of

$40,000 only. The difference relates to the writing down of inventories, etc. at the end of the year 1920. With the determination of this question still open, VerLinden writes, under date of May 5th:

> "I do not approve of the settling of my compensation for 1920 as per calculations submitted by you. As the Corporation has delayed, since the first of the year, paying me the compensation due for my services under the contract, I have drawn sufficient money to cover the compensation due me pending settlement."
>
> "I have also in mind that the Corporation is holding as custodian for me, certificates of stock issued in my name covering a portion of my bonus for the years 1918 and 1919. Of course as to the latter, upon the delivery of that stock to me I will repay the money drawn by me covering those items."

While no amount of withdrawal is mentioned in this letter, it appears that VerLinden has, without authority, drawn cash against his own disputed calculation of 1920 compensation and also cash against delivery to him of certificates of stock, which, under the plan heretofore accepted by him, the Corporation is custodian of for him. A letter has been written VerLinden requesting that he return the money withdrawn and come to New York to settle the question of compensation immediately.

The above incidents are related in some detail, in order that the Finance Committee may issue definite orders if it is thought wise to do so. To the writer, such transactions appear to approach closely to misappropriation of funds and were it not for the heretofore customary loose control of division managers, Messrs. Collins and VerLinden would be subject to severe reprimand and cancellation of authority to withdraw funds for their own account.

PIERRE S. DUPONT

1/*

Defendant's Exhibit (DP) No. 65

Detroit, July 12, 1923.

5717

FUEL DOPE

Messrs.C.F.Kettering, C.S.Mott and P.S.duPont

Kettering proposed that the manufacture of dope be started as soon as possible by the duPont Company in order to produce 100 gallons per day or thereabouts, possibly working up to greater production, leaving to the future the determination of building of large plants capable of producing 8,000,000 gallons per annum, sufficient to dope all gasoline fuel in the United States.

The Standard Oil people would like to get the first production, in order to dope fuel at Baltimore, Scranton and other points where trouble is experienced with existing fuels. It has been suggested they pay 1¢ per gallon royalty on all fuel doped and purchase the dope, say, at $25 per gallon. As the dope would require one gallon in 1500, the total amount received per gallon would be $35, and would cost approximately $5.

Another alternative is to use the first dope in manufacture of pills to be used in Cadillac cars. These pills, made out of para toluidine, covered with parrafine, would be about 1" in diameter for a 5 gallon charge of gasoline.

1/en

3441

E

Defendant's Exhibit (DP) No. 66 5718

IRENEE DU PONT

Positions Held in E. I. du Pont de Nemours and Company and Predecessors

1903 to Date

1. E. I. du Pont de Nemours Powder Company (1903 corporation)

Engineer, Black Powder Department, Construction Division,	12/ 1/03—11/30/04
Assistant Treasurer, Treasurer's Department,	12/ 1/04— 8/30/11
Director,	12/20/04— 5/22/26
Finance Committee Member,	3/24/05—10/ 4/05 3/ 6/15— 3/27/18
Manager, Development Department,	2/20/09— 1/31/11
Assistant to General Manager of the Company,	2/ 1/11— 2/14/14
Vice President,	2/15/14— 2/28/14
Assistant to President,	3/ 1/14— 9/18/14
Executive Committee Chairman,	9/19/14— 3/27/18

2. E. I. du Pont de Nemours and Company (1915 corporation)

Executive Committee Chairman	9/ 8/15— 4/18/19 9/26/21— 3/15/26

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5719

Finance Committee Member	9/ 8/15—12/31/46
Vice President	9/ 8/15— 4/30/19
Director	9/ 8/15 to date
President	5/ 1/19— 3/15/26
Vice Chairman of Board of Directors	3/15/26— 5/20/40
Finance Committee Chairman	3/15/26— 3/17/30

2

3443

3

Defendant's Exhibit (DP) No. 67

5720

JUN 9 - 1955

COPY

May 14, 1914.

Mr. T. C. du Pont,

We, the undersigned, being the owners of approximately 16,000 shares of the Common Stock of the Powder Company, wish to lay before you for your consideration the following proposition:

Several members of our Executive Committee have reached the point where age should cause them to lay aside the active work of the Company, in fact have reached nearly the age and position your predecessors had when you relieved them of the duties of actual management.

We have had, and still have, such faith in the Company as to have invested practically all our money in it.

We are anxious to increase our Common Stock holdings in case you, Mr. A. I. du Pont and Mr. P. S. du Pont are willing to sell us a sufficient portion of your holdings on terms to be agreed upon to make the proposition interesting to us, and will turn over to us the management of the Company; details of this to be worked out in case you look upon it favorably.

We are about the ages you were when you took hold, and the present is a more opportune time to break in the younger men, than later when we may have to jump in in a hurry without our present opportunity to call upon you and others for advice from time to time, when we desire it.

Respectfully,

(Signed) Irenee du Pont
A. Felix du Pont
Lammot du Pont
R. R. M. Carpenter

3444

WHEREAS, I, IRENEE DuPONT, of Christiana Hundred, New Castle County, Delaware, have this day received from Delaware Realty and Investment Company a certificate evidencing one hundred shares of the capital stock of said company, to be held as a Trust Fund for the purposes hereinafter disclosed; and

WHEREAS, I have consented to accept said shares of stock only upon the trusts, terms and conditions hereinafter declared and made known and have also consented to accept any other securities, cash or property, real or personal, that may be hereafter transferred, conveyed or delivered to me by any person or persons or from any source, whatsoever, upon the same trusts, terms and conditions; and

WHEREAS, I desire hereby to declare and make known the said trusts, terms and conditions;

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS, That I, the said Irenee duPont, for and in consideration of the sum of One Dollar to me in hand paid, at and before the sealing and delivery hereof, the receipt whereof is hereby acknowledged, and also in consideration of the premises, hereby declare, covenant and agree as follows, to-wit:

THAT I have received, now hold, will continue to hold, and will dispose of the said One hundred shares of stock and will hereafter receive, hold, continue to hold, and dispose of any other securities, cash or other property, real or personal, that may be hereafter transferred, conveyed or

delivered to me, by any person or persons or from any source whatsoever, to be so received, held and disposed of, and also any other securities, funds or property into which such shares of stock may be converted under the terms hereof or into which any accretions to the Trust Fund, as hereinabove or hereinafter provided for, may be converted under the terms hereof, IN TRUST for the following uses, intents and purposes, that is to say:—To collect and receive the income arising therefrom and, after deducting the expenses of administering the trust, until my daughter, Eleanor Frances duPont, shall have attained the age of thirty-one years, to invest the net income of the trust estate, or part thereof, in good and safe securities as accretions to and in augmentation of the Trust Fund, or to pay over such net income, or part thereof, to or for the use of my said daughter, as in my judgment, as Trustee hereunder, may be for the best interest of my said daughter, and upon the attainment by my said daughter of said age of thirty-one years to assign, transfer, convey, pay over and deliver the whole of the then corpus of the trust estate hereby created, including all accretions thereto from whatsoever source derived, unto my said daughter free and discharged from any and all trusts whatsoever.

—2—

In case my said daughter should die before attaining said age of thirty-one years, leaving lawful issue her surviving, the trust estate hereby created shall continue, upon the same terms and conditions, for the benefit of such issue, in equal shares, until such issue shall, respectively, attain the age of twenty-one years and, as each of such issue shall reach said age of twenty-one years, he or she shall receive his or her respective share of the corpus of said trust estate.

In case my said daughter should die before attaining said age of thirty-one years, without leaving lawful issue her surviving, the corpus of the trust estate hereby created shall be equally divided among or for the benefit of my other children, viz,—Irene Sophie duPont, Margaretta Lammot duPont, Constance Simons duPont, Doris Elise duPont, Mariana duPont, Octavia Mary duPont, Lucille Evelina duPont, and Irenee duPont, Junior, or the survivors of them and the lawful issue of such of them as may be then deceased, in the following manner, to-wit,—the shares of those of such other children who shall have attained the age of thirty-one years shall be assigned, transferred, conveyed, paid over and delivered to them respectively; the shares of those of such other children who have not attained said age shall be added to and become parts of trust estates similar to this that have been created, simultaneously with the creation of this trust estate, for their benefit, respectively; and the shares of those of such other children who shall then be deceased leaving lawful issue then surviving shall continue to be held upon the same trusts and conditions as are herein prescribed but for the benefit of such lawful issue, in equal shares, per stirpes and not per capita, until such issue shall respectively attain the age of twenty-one years and as each of such issue shall reach said age of twenty-one years he or she shall receive his or her respective share of the corpus of the trust estate hereby created.

As such Trustee, I shall have the right, in my absolute discretion, to sell all or any portion of the trust estate, or of any accretions thereto, and to re-invest the proceeds thereof in any securities or other property that I may deem proper and to call in and re-invest the same in my absolute discretion, but it shall be my duty to hold all such property

or securities and manage the same only as constituting the whole or a part of the Trust Fund hereby created or contemplated.

In case I should die before the termination of this trust, the person or persons who shall be the Executor or Executors of my last will and testament, or who shall have the execution thereof, shall forthwith become Trustee or Trustees of the Trust Fund hereby created or contemplated and shall administer the same in the manner herein prescribed with all the discretion and right to exercise judgment hereby vested in or reserved to me.

In making investments of the Trust Fund, neither I, as original Trustee, nor any succeeding Trustee or Trustees shall be limited to such investments as may now or hereafter be authorized by law, but shall be permitted to make investments of the Trust Fund in any class of bonds, stocks or other securities or property, without reference to any present or future statutes or rules governing the investment of trust funds.

Neither I nor any succeeding Trustee or Trustees shall be held responsible for any loss incurred by the decrease in the market value of the securities or property at any time constituting the trust estate or for any other loss incurred in any other manner except as the result of fraud or breach of trust.

IN WITNESS WHEREOF I, the said Irenee duPont, have

hereunto set my hand and seal this 4th day of June, A. D. 1924. ~~(Executed in duplicate)~~.

Signed, Sealed and Delivered
in the Presence of:

(S) W. E. Kolck (S) Irenee du Pont (SEAL).

This is to certify that the foregoing is a true and exact copy of certain trust agreement executed June 4, 1924, which is still in full force and effect.

Feb. 5, 1936 *Irenee du Pont*
Date *Laird & Co.*

NOTE: "Signature guaranteed" is stamped between Irenee du Pont and Laird & Co. Italics indicate handwriting.

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E

Defendant's Exhibit (DP) No. 69

COPY

5726

December 17, 1908

Messrs. J. A. Haskell,
P. S. duPont,
Wm. B. Dwinnell.

B u i l d i n g.

Gentlemen:-

This to advise you of the following action taken by the Executive Committee December 16th:-

Mtg. #179
ec: 16, 1908
P. 2747
Book #9.

"A general discussion ensued concerning the probable amount of smokeless powder orders wex are likely to receive from the Government in the future, and the likelihood of our having considerable idle capacity at our smokeless powder plants. It was moved and unanimously carried that Messrs. J. A. Haskell, P.S. duPont and Wm. B. Dwinnell be appointed a committee to report as to what steps are already being taken, and what additional steps they would recommend, in the direction of developing further uses for guncotton or any of the other products of our smokeless powder plants."

Yours very truly,

L. R. Beardslee.

Sec'y, Executive Committee.

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Defendant's Exhibit (DP) No. 70 March 6, 1909.

Messrs. J. A. Haskell,
P. S. duPont,
Irenee duPont.

5727

Building.

Gentlemen:-

This to advise you of the following action taken by the Executive Committee March 4th:-

Mtg. #185
Mar. 4, 1909,
P. 2777
Book #9.

"It was moved and unanimously carried that the Special Committee appointed on December 16, 1908, to make a study of the question of further uses for gun-cotton and the other products of our smokeless powder plants be changed to consist of Messrs. J. A. Haskell and Irenee duPont."

Yours very truly,

L R Beardslee

Sec'y, Executive Committee.

3451

Cls

E

Defendant's Exhibit (DP) No. 71

E. I. DU PONT DE NEMOURS POWDER CO.

DEVELOPMENT DEPARTMENT

WILMINGTON, DELAWARE

Sept. 12, 1913

Mr. R. R. M. Carpenter, Manager,

O F F I C E. Nitrocellulose Industry.

Dear Sir: OUR FILE 800-A.

You recently asked me to give some attention to the purposes for which nitrocellulose is used in the various arts and manufactures, to determine whether there are uses, other than those with which we are already familiar, that seem susceptible of development into outlets for material quantities of nitrocellulose in addition to our present sales.

I submit as follows a list of the principal industries using nitrocellulose and a few minor uses, in order to cover the field more fully:-

1. Explosives
2. Artificial leather, including dress shields, hospital sheetings, etc.
3. Lacquers, dips, enamels, paints, bronzing liquids, varnishes, etc.
4. Collodion
5. Finishing leather splits
6. Finishing patent and other leathers
7. Seals for fruit jars
8. Backing for linoleum (pyroxylin coated paper)
9. Cement for belting
10. Celluloid
11. Photographic films
12. Artificial silk and imitation horse-hair
13. Imitation cork
14. Imitation furs, imitation feathers, india rubber substitutes and other miscellaneous uses

I report as follows on the above:

1 to 4 inclusive: We are engaged in the manufacture of these commodities and also sell nitrocellulose and mixtures to competitors in some of these lines.

5 and 6: We sell considerable quantities of nitrocellulose and mixtures to leather finishers.

7, 8 and 9: These are now receiving the attention of the Operating and Sales Departments.

10 and 11: Celluloid and photographic films are now being carefully studied by this Department.

3452

5729

12: The rapidly decreasing popularity of pyroxylin products of this class prohibits the establishment of a plant in this country.

13: In the manufacture of imitation cork by cementing finely ground cork under pressure, pyroxylin was used as a cement ingredient, but there are cheaper cements that are just as effective and there is probably no pyroxylin being used for this purpose at the present time.

14: The manufacture of imitation furs, imitation feathers, India rubber substitutes and other miscellaneous articles does not require enough nitrocellulose to warrant study of these industries, but I have called them to the attention of Mr. Moosman and offered to assist him in developping them from a sales standpoint.

SUMMARY

From the above it appears that, aside from any new and novel uses for nitrocellulose that may be developed, the present work of the Development Department covers the situation quite thoroughly, although it might later be found desirable to investigate the leather industry, i.e. particularly the finishing of leather splits. I recently talked to Mr. Moosman regarding this and have also discussed it with Mr. Kniffen, and they both feel that our present relations with the leather finishers are satisfactory and that we should wait at least several months before deciding whether to investigate this subject. Mr. Moosman has some partly developed plans under way and does not want to have them interfered with. I asked him to collect available data in the meantime and will take the subject up again about the end of this year.

Yours very truly,

W. W. Richards.

WWR/M

NOTE: R-71-A is underlined and appears in the upper right hand corner of the document. "Noted" and illegible initials and "also noted C.I." is stamped in the right hand margin. "38 pt 1" is written following the date of the document.

2453

Defendant's Exhibit (DP) No. 72

EXCERPTS FROM DEVELOPMENT DEPARTMENT

Annual Report of Development Department for the Year 1909

February 9th, 1910.

Executive Committee,
Building.

Gentlemen:

—2—

Artificial Leather.

The study of this subject was commended early in the year 1909 as a possible outlet for nitrocellulose in case our Government Smokeless Powder business should dwindle. The early work on the subject indicated that most of the artificial leather on the market was of a poor quality although there existed an unsatisfied demand for a high grade artificial leather beside which there was reason to believe that the demand for the high grade article would increase greatly were an ample supply of reliable material placed on the market.

With a view of determining whether a satisfactory arti-

—3—

ficial leather can be produced at a reasonable cost as well as to determine whether the solvents used in the manufacture can be recovered, a coating machine for manufacturing artificial leather was set up in the fall at the Oakland plant, while this plant was being abandoned by the smokeless department. Experiments in the early winter have been impeded by minor difficulties, probably largely due to our lack of familiarity with the subject, so that the year closed without our having the data desired but we

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have gained information which will enable us to make more rapid progress in the future.

ARTIFICIAL SILK.

A study of the different methods of manufacturing artificial silk assures us that the product resulting from the nitrocellulose method, though more expensive, is of the best quality and therefore like artificial leather is a possible outlet for our nitrocellulose should Government orders decrease to a marked extent. Of the nitrocellulose processes, that of Chardonnet, which is being worked on a large scale at Besancon, France, with a subsidiary company operating in Italy, is the best known and most successful. It was thought that our best move would be to purchase the experience and rights of such a company and for this purpose negotiations with the Chardonnet people were entered into and a proposition received, but by this time the immediate necessity of finding an outlet for nitrocellulose had disappeared because of the large orders received from the Government and the work on the subject was not pushed rapidly. The considerable capital cost required, together with the decreased likelihood of the United States Government cutting off our orders for smokeless powder, caused us to delay active work on the subject from that time, although it was recognized that should our alcohol factory be eminently successful the low cost of this material and other resulting therefrom would make the artificial silk industry much more attractive.

In the fall Dr. Sparre visited the Besancon factory and has made a full report thereon. We have also kept negotiations alive so that they can be again taken up with a probable benefit from the delay as soon as our alcohol factory is a proven success.

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CELLULOID.

A study of this subject was made as another possible outlet for ntirocellulose. It demonstrated that it would be necessary to engage in a great amount of detail manufacture to successfully compete with the large companies at present engaged in this business and who sell their product largely in the finished form of combs, collars, knick-knacks, etc. or in sheets in hundreds of different thicknesses and colors. We have therefore not recommended going into this line of manufacture but have recommended a study of making nitrocellulose from short fibre cotton which would be suitable for celluloid manufacture. The Experimental Laboratory have scheduled this study as part of their 1910 work; it being our idea, if successful, to try to supply the nitrocellulose as such to the celluloid companies. This would have to be on a narrow margin of profit, but would be desirable as it would tend to keep them out of the nitrating business.

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Respectfully submitted,

Irenee duPont,
Mgr. Development Department.

JMS.

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Defendant's Exhibit (DP) No. 73

TO EXECUTIVE COMMITTEE. SERIAL NO. S-535.

FROM DEVELOPMENT DEPARTMENT. NOVEMBER 27th, 1914.

5733

BUILDING AND OPERATING A CELLULOID PLANT.

This report is compiled in compliance with the request of the Executive Committee under date of April 27th, 1914, reading as follows:

"RESOLVED, that the report from the Development Department in reference to the Fiberloid Company be received and that the Development Department be requested to carry forward a complete study as to the details of building a plant for the manufacture of celluloid at one of our existing Smokeless Powder Works, embodying in its study both phases of the situation, i.e. - a large plant which would make an economical unit, or a small plant for the purpose of working into the celluloid business gradually, in order that we may be in a position to make a decision on any time hereafter when it may seem desirable".

PREVIOUS WORK.

For further information regarding celluloid the reader is referred to the previous reports of this Department to the Executive Committee on this subject, dated June 13th, 1913, February 16th, 1914 and April 17th, 1914.

Inasmuch as it is thought that the conditions of the celluloid industry in this country were quite fully covered in those reports and as subsequent investigation has failed to reveal any radical change in or variance from the conditions outlined in those reports, and also as the above resolution indicates a lack of interest in the acquisition of control of a present operating celluloid plant, the scope of the present report is confined almost entirely to a discussion of the entering of this Company upon the production of sheet celluloid by the building of a new plant.

3457

SOURCES OF INFORMATION.

The sources of information relied upon for the figures consolidated into this report are as follows:

Information collected during the study of the celluloid operations at Troisdorf.

General data collected during investigation of the industry from a commercial standpoint in the United States.

Assistance afforded by a celluloid expert of a number of years' experience with both the Fiberloid and Viscoloid Companies employed by this Department.

Close co-operation with the various departments of the Company in working up various phases of the manufacture in the particular branch covered by those departments.

SCHEME OF REPORT.

To facilitate the study of the report it has been divided into two parts, namely -

First - The text, in which the subject is discussed in a general way and

Second - The exhibits, in which the subject is worked up in detail. Also the exhibits are preceded by explanatory notes on each one, where necessary.

GENERAL.

Upon commencing the study, the question of location was taken up with the Smokeless Operating Department and the Haskell plant was, for a number of reasons, decided upon as the logical location, one reason being that certain parts of the plant and equipment were, at that time, believed to be not required for powder operations and have, therefore, been included in the estimates as part of the celluloid plant. Though these conditions do not exist at the present time, it is quite possible that they will when the time arrives for proceeding with the work. However, the estimates have been made based on the actual cost of installation so that the figures should not be appreciably altered whether the plants and equipments be old or new.

In accordance with the request of the Executive Committee estimates were compiled of a large economically operating plant and for the small plant a capacity of 10% of the large one was accepted. Inasmuch as the small plant was so designed as to readily facilitate enlargement, as might be expected, neither its original cost nor its cost of operation are such as might be expected had it been layed out with a view to economy of installation and efficiency in operation.

However, circumstances which have arisen during the last two months may make it expedient to postpone for the present the erection of even the small plant at Haskell. This possibility has prompted the consideration of one more step in the development of this manufacture which, even had such conditions not arisen, might not have been inadvisable, namely - taking advantage of this period of postponement to install and operate an experimental plant at the Experimental Laboratory.

The apparent diversity of opinions regarding the most efficient process of operation among the oldest and most experienced manufacturers, as referred to in Exhibit "A", seems to easily justify the most thorough investigation of the various steps before attempting to erect even a small commercial unit.

In view of the above an estimate has been made and attached to this report in the form of a request for appropriation, this covering cost of purchasing one unit of the necessary celluloid equipment and installing it in present unused buildings at the Experimental Laboratory. Machines of commercial size have been estimated upon so that they might be transferred to the large celluloid plant should it later be built, and also that the product produced even during experiments might, if satisfactory, be sold to consumers and thereby not only assist in covering the costs of the experiments but also introduce the product in the market. The balance of the equipment not transferrable would be a valuable addition to the Experimental Labora-

tory for subsequent work, both for general nitro-cellulose experiments and especially so for subsequent celluloid work.

PLANT CAPACITIES.

The capacity estimated upon for the large plant has been selected, large enough that the plant could be operated economically and small enough that its output might be absorbed in a reasonable length of time by the trade without greatly affecting market prices. Although it cannot be said that the present demand exceeds the supply in this country, it is indisputable that consumption is steadily increasing. Present celluloid companies are almost constantly increasing their productive capacity to supply this increment of increase so that it seems reasonable to suppose that after entering upon the operation of the small plant and securing a portion of the present market demand, and also a percentage of the annual increment of increase, results will justify gradual enlargement.

The present production (which may be accepted also as the consumption) in this country amounts to, as near as it is possible to ascertain, from eight and one half to ten million pounds of celluloid in the form of sheets, rods, tubes, etc. per year. Of this approximately fifty per cent is manufactured into celluloid articles by the raw celluloid manufacturers themselves. The estimated productive capacity of the large plant figured upon in this report is 1,056,000 pounds of nitro-cellulose per year, resulting in 1,476,000 pounds of celluloid, or, say, about 15% of the present production in this country.

The productive capacity of the small plant, or in other words, of the first unit of the large plant, will equal 10% of the above. The experimental plant would be operated at as small a capacity as would be possible and at the same time show results of value for use later on a larger scale.

FOREIGN COMPETITION.

This has been discussed at length in previous reports but it may be added that since detailed cost figures have been made up on production it is believed that, while it is possible that competition from importations may slightly affect the market prices, the cost of production abroad will not allow foreigners to seriously threaten the profits of United States manufacturers of sheet celluloid, especially in view of the handicaps discussed in previous reports, such as difficulties of making prompt deliveries, cost of shipping, duties, prejudice against foreign product, etc. With regard to celluloid articles, it is believed that owing to the interruption of their importations, especially of the cheaper grades which have heretofore been very largely imported from Germany, this manufacture will be considerably stimulated in this country. Though the prospects in this business have not been sufficiently lucrative to attract United States manufacturers to take it up in the past on a large scale in competition with the foreigners, in view of the requisite amount of hand work, it is thought that once this manufacture is entered upon the business will not be readily surrendered to foreigners. Actual cases of this manufacture being started since the cessation of importations are known and it is thought that the new demand stimulated by this new business will, in time, be felt in this country.

DUPONT AS CELLULOID PRODUCERS.

While the commercial and manufacturing experience, established business, and financial resources of the present large celluloid companies in this country are not to be despised, a celluloid plant operated by the duPont Company will not be without its own advantages, which will assist it in overcoming the difficu[illegible]s of first obtaining a foothold and later expanding its field in face of the antagonism to be expected from powerful

competitors. Among these advantages may be mentioned probable cheaper source of part of the raw materials manufactured by the duPont Company, such as acids and alcohols, more efficient method of nitro-cellulose manufacture which should result in cheaper cost of production, probable greater knowledge of cellulose, which may result in a cheaper substitute for the expensive tissue paper now nitrated by celluloid companies, and advantage of a large sales force to press a more active campaign than is now customary in the celluloid business.

In general, while the duPont Company will, upon entering this new market, do so as an unknown, it is believed that the difficulties are no greater than may be expected in most other new fields and are certainly well within the competency of the duPont Company to master.

INVESTMENT & EARNINGS.

The amount of the investments and earnings is carefully detailed in the exhibits, the results showing that to erect and equip for operations a one unit plant susceptible of being gradually enlarged as conditions warrant, the total investment, including fixed and working capital, would equal about $285,000 and the receipts from sales would a little more than pay for the cost of operations. As the plant is gradually increased the profits would increase until, when the large plant with an annual output of 1,476,000 pounds of celluloid is reached, the annual profits should equal about $320,000 with a total investment of $950,000 or a return of about 33%. As, strictly figuring, such charges as past and future cost of investigating and experimental work, interest on investment during period of erection and early operations, etc. should be capitalized and added to total investment, this $950,000 should be somewhat increased, but the extent of increase is at present practically inestimable. As the earnings of $320,000 per year would equal a return at the rate of 30% per year on $1,100,000, or

$150,000 more than the $950,000 which should amply cover these items, it may be said that the return on the total investment in celluloid should eventually show a return of in the neighborhood of 20% on the total investment.

RECOMMENDATION.

In view of the close resemblance between the manufacture of celluloid and that of smokeless powder which will permit of the utilization, not only of part of the buildings and equipment of the Haskell smokeless powder plant left idle under normal conditions, but will also afford an opportunity for employing to good advantage the technical and manufacturing ability of the smokeless powder organization, thus taking advantage of the facilities and capabilities rendered superfluous by the decreasing smokeless powder business and in view also of the prospects of the generous return of twenty percent on the capital invested, it is recommended that active work on this subject be continued and that should the present time not be considered auspicious for the erection of even a small celluloid plant at Haskell advantage be taken of the time by the granting of the attached request for appropriation to install at the Experimental Laboratory suitable equipment for carrying out experimental work on a semi-commercial scale, which will be of valuable assistance in connection with the subsequent erection of a small celluloid plant to be gradually increased as results warrant, until the capacity of an economically operating plant is reached.

APPROVED BY: [illegible]

PREPARED BY:

NOTE: The words Holdover and the initials LRB are written at the top of the document.

Defendant's Exhibit (DP) No. 74

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E. I. du Pont de Nemours & Company



ESTABLISHED 1802

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ANNUAL REPORT

of

E. I. DUPONT DE NEMOURS & COMPANY

The sudden ending of the war on November 11, 1918, brought about an almost immediate curtailment of the activities of E. I. du Pont de Nemours & Company, and the few remaining weeks of the year 1918 were sufficient to eliminate almost completely all munition business. The magnitude and rapidity of this reduction is well illustrated in the shrinkage in number of employees at munition plants, of whom on November 11th there were 85,638 engaged on war orders, while on December 27th, 28,101 only remained on the payrolls. Officers of the company encouraged the departments at Washington to cancel all contracts quickly in order to save material and labor in producing unnecessary explosives. It so happens that orders for the year 1918 were practically completed. Little will be done on contracts covering the first six months of 1919 and no profit will be derived from the uncompleted portion thereof. The contracts cancelled amounted to about $260,000,000.

The company now returns to its commercial business, consisting of lines of manufacture of previous years supplemented by others to be dealt with later in this report.

The reconstruction period and the future of the company has received continuous thought and attention even during the very first year of the war. Uncertainty as to outcome of the latter, in point of time, and as to the position of the company at the

close of hostilities, has made it heretofore impossible to forecast the future with certainty, but today many doubts have cleared away. In order that the stockholders may have a better picture of our war activities and of the company's present position, a review of recent years may not be inopportune.

From 1915 to 1918 the gross capital employed by the company has increased from $83,432,000 to $308,846,000, or 270%. In addition there has been distributed to stockholders $140,983,000, making a total increase during the war period of $366,397,000. The resulting gross business has amounted to $1,049,000,000, including the cost of construction work.

Providing so much capital, without the sale of securities and building up the management of this large business in so brief a time, has called for unceasing and exacting attention of the entire force of employees of the company. Their zeal, industry and efficiency, their cooperative spirit, their loyalty to the company and to the Nation is unexcelled, and is counted the most satisfactory part of their successful accomplishment.

Construction costing $220,000,000 has been executed by our own Engineering Department, numbering at times 45,000 men. This organization was built up from a nucleus of about 800 employed in that department during the six months prior to the war. The construction work involved much that is peculiar to the explosives business for which designs, layouts, etc., nearly all, were prepared by our own men, being unobtainable elsewhere. Though the larger part of the undertaking has been of this strictly technical na-

ture, the supplementary work of ordinary engineering construction may give a better idea of the magnitude of the whole, thus:

The Power Houses of the factories at full capacity require the continuous development of 200,000 boiler horse-power.

The Pumping Stations have a capacity of 305,000,000 gallons per day, exceeding the combined daily water consumption of the cities of Philadelphia and Boston.

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The Filtration Plants filter and purify 175,000,000 gallons of water per day, to a degree satisfactory for domestic as well as for manufacturing use.

The Refrigeration Apparatus has a capacity of 9,350,000 pounds of ice per day, equal to the consumption of the city of Chicago.

Railroad Classification Yards, capable of handling 1,600 cars at one time, have been laid out and are in operation.

One hundred miles of standard railroad and two hundred and eight miles of narrow-gauge railroad have been constructed.

The enclosing of the plants required over 150 miles of fencing.

Arrangements have been made for storage of 500,000 tons of coal, a provision deemed advisable for a daily consumption of 10,700 tons.

The factories have handled 1,330,000,000 pounds of cotton, or 2,660,000 bales.

Production of nitric acid, 1,930,000,000 pounds, required the handling of 2,812,000,000 pounds of nitrate of soda.

The Sulphuric Acid Plants have produced 2,500,000,000 pounds of acid, requiring 922,000,000 pounds of sulphur.

The factories have handled 216,500,000 gallons of alcohol, of which 86,600,000 gallons have been consumed and the balance recovered for reuse.

Individual dwellings to the number of 10,790 have been built. These, together with the accompanying hotels, boarding houses, women's dormitories and bunk houses are capable of housing 65,000 persons. All of these dwellings are lighted and furnished with purified water from the company's plants and are connected to modern sewage systems. In addition to these dwellings, the Engineering Department has built 570 community buildings, such as those to house the Young Men's Christian Association and Young Women's Christian Association, cafeterias, school-houses, lodge halls, post-offices, drug stores, banks and railroad stations, a total of 11,360 buildings, costing with

the necessary streets, sidewalks, fire protection, etc., about $37,000,000.

The military powder factories constructed by E. I. du Pont de Nemours & Company and its subsidiary Du Pont Engineering Company, cover 9,025 acres (14 square miles), equal to twice the built-up area of the city of Wilmington, Delaware. Incident-

ally their cost is about double the assessed value of Wilmington. Their annual capacity is 893,000,000 pounds of explosives or in carloads sufficient to extend from Baltimore to New York in continuous line.

At the height of the work the rate of yearly expenditures was three times as great as that of the construction of the Panama Canal.

In the last annual report attention was called to the contract of January 29, 1918, under which the company undertook the construction and operation of a military powder plant near Nashville, Tennessee, for the United States Government.

For the purpose of segregating this work the Du Pont Engineering Company was organized. All of the stock of this company is owned by E. I. du Pont de Nemours & Company.

Seven miles of railroad to take building materials to the plant site was begun February 9, 1918, and was completed on March 9th, 29 days.

Ground was broken for the erection of the plant on March 8th.

The contract called for the erection of a factory capable of producing 900,000 pounds of military smokeless powder in each day of twenty-four hours, the plant to be divided into nine complete units of 100,000 pounds daily capacity each.

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A Sulphuric Acid Plant, the first of fifteen units of 28,000 tons annual capacity each, began continu-

ous operation on June 1st, 67 days after breaking ground for this acid plant.

The Nitric Acid Plant began operation on June 10th.

Guncotton, the raw material of powder manufacture, was produced on June 23d.

The first finished powder was granulated on July 2d, or 116 days after breaking ground for erection of the factory, 121 days ahead of contract requirement.

The second powder unit began manufacture on July 24th, at which time the first unit was manufacturing 65,000 pounds per day.

The third powder unit began operation on August 20th, at which time the first and second units were manufacturing 150,000 pounds per day.

The fourth powder unit began operations September 3d, at which time the first, second and third units were producing 200,000 pounds per day.

The fifth powder unit began operation on September 24th, at which time the first four units were producing 275,000 pounds per day.

The sixth powder unit was ready for operation on November 11th, but owing to the cessation of hostilities, it has not been operated. However, the sixth guncotton unit began operation November 2d, at which time the first five powder units were producing 501,000 pounds per day.

The seventh powder unit was about 98% complete on November 11th, and the seventh guncotton unit was ready for operation; eighth and ninth units

were approximately 60% complete. At that time the entire plant was about 93% completed.

The manufacture of guncotton was reduced on November 27th and ceased totally on December 7th; since that time the conversion of this guncotton into smokeless powder is proceeding at a leisurely rate and will probably be finished about the middle of January.

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The production of powder at this factory will total about 36,000,000 pounds at the cessation of operations. At signing of the armistice manufacture of powder was 13,000,000 pounds ahead of contract requirements and the factory was 93% completed or 96 days ahead of scheduled time. The estimated cost of construction was $75,000,000. Had the contract been completed there would have been an over-expenditure not to exceed 7%, exclusive of the increased wage schedules fixed by the Government.

Under the contract no profit was to be paid for construction work and, owing to cancellation prior to the completion of manufacture of all powder required, the total profit after paying taxation will probably amount to $1,300,000 on transactions covering $125,358,500 or 1%.

However, the directors always considered this work a military necessity and they never had expectation of profit adequate to compensate for the disadvantages of the burden assumed.

The operation of the factories of this company above mentioned has resulted in production of 1,466,761,219

pounds of military explosives of all kinds furnished to the United States and the Allied Nations. The importance of this work is better realized from the fact that this output is estimated at 40% of the amount of explosives made throughout the world for the Allies during the war. During the four years of these operations the manufacturing departments have been continually ahead of deliveries required under contracts and at all times have held large quantities of explosives in the company's magazines awaiting shipping instructions. The number of men employed in the military factories alone reached a maximum of 47,914, an organization built up from a total of 5,300 men employed in all departments of the company before the war.

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The total capacity of the company's factories for military propellant powders in 1913 and 1914 was rated at about 700,000 pounds per month, but this output had never been maintained for any considerable period of time. The rated monthly capacity reached 37,962,000 pounds in March, 1918, and actual output of 37,700,000 pounds was made in that month. Thereafter the diversion of part of the plants to the production of special powders somewhat reduced the output, but from March to October an average monthly production of 35,380,000 pounds was maintained. In addition to this quantity the factory at Nashville, Tennessee, built for the United States Government, was brought to a production of 12,500,000 pounds monthly at the time of the signing of the armistice. Had the war continued the completion of the Nashville plant "Old Hickory" would have raised the annual productive capacity of all military propellant powder factories operated by the company in 1919 to 815,000,000 pounds.

In the line of disruptive explosives for military purposes the capacity of the factories of the company prior to the war was negligible. At the end of the year 1918 a total annual capacity of 139,000,000 pounds had been installed.

This great development was not a mere duplication of existing units of production. The handling and storage of enormous quantities of explosives and combustible ingredients called for a complete revision of previous practice. Without the radical improvements adopted it is doubtful if the requirements of customers could have been filled; certainly they could not have been met in proper time.

The revolutionary changes adopted resulted in a rapidly increased output, at the same time economy in labor and material was effected. The 1918 output required the employment of 22,000 men less than the proportionate number necessary under pre-war practice. Operating methods developed during the war period resulted in calculable savings of $74,000,000.

Prior to the war the company had made comparatively little powder for foreign nations. The sudden call of the Allied Governments required the fitting of our form of powder, then

almost unknown abroad, to guns designed to use other ammunition. This necessitated development of forty different powders for as many guns. These powders function under exacting specifications—though some of them average 42,000 pieces to the pound each of these pieces is a perfectly formed cylinder with one or seven longitudinal perforations whose important dimensions require an accuracy of not more than 1/1000-inch variation from the mean.

In addition to the foreign powder the United States Government needed, for Army and Navy use, ninety different powders all produced under strict specifications. Many changes in the ballistic requirements of the guns made it necessary to re-establish the characteristics of the powder, a change that was equivalent to the fitting of entirely new guns.

It will be appreciated that the production of military propellant powders is an exact science and that the wonderful achievement in enormous production brought about by our Smokeless Powder Operating Department is increased in value when we consider the minute care that is necessary to produce accurate results. The measure of success attained lies in the fact that all specifications have been met while not a single lot of powder has failed of final acceptance and no powder has been returned to us as unsatisfactory.

Great as has been the output of standard military products it should not be allowed to overshadow the production of special explosives and of countless accessories such as caps, fuzes, ignition pellets and the loading of explosives for use in the field. Sales of these so-called minor items aggregated $206,000,000, an amount eight times the company's total annual business prior to the war. In the cap works and loading department alone the number of employees increased from 225 before the war to over 4,800 in November, 1918.

The production of so large a quantity of explosives and accesssories has not been without attendant risk due to accident or enemy interference. The company has maintained a most efficient guard at all of its principal factories, 1,400 men having been employed in this service. The organization and maintenance of this guard is in a line of military activity that

had been unnecessary before the war. The work has been handled with great efficiency, and as far as can be observed no accident has befallen through failure of this "Protective Division" to act at the proper moment. The company has been fortunate in its freedom from serious disaster during the war period. The ratio of the number of killed and injured and property loss to total men employed was far less than in preceding years, indeed was much less than in many reputed safer industries. However, this should not lead one to minimize the importance of the accident question during the four years under consideration. Three hundred and forty-seven employees have lost their lives through accidents that have cost $6,700,000, including value of property destroyed by fire and explosion. Sixty-two hundred and fifteen fires have been reported and accidents of more or less consequence have happened nearly every day. Numbers of these were possible starting points of disaster that was prevented by the prompt action of the fire-fighting forces of the company and by unremitting attention to the prevention of spread of fire and explosion. In consequence a loss of over $5,000 has resulted from 51 only out of this great number of accidents.

The foregoing program placed a great burden upon our purchasing organization and those who assisted in the difficult task of furnishing punctually when and where needed enormous quantities of materials and supplies not only for construction but for operation.

Their task was performed successfully and with foresight, ability and vigor. Every pound of material required was secured without a single hour's delay, either in the completion of construction work or in the execution of contracts,

and the company was at all times able to sell, manufacture and deliver the maximum output of its plants.

The purchasing program was handled in such a way as to effect large savings and to materially augment profits for the stockholders.

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The number of employees in the department in 1914 was 56; in November, 1918, 268.

The total purchases increased from $25,200,000 in the year preceding the war to an approximate total of $800,000,000 for the four and one-half war years.

The Military Sales Department of the company is numerically a small organization whose chief, Colonel Edmund G. Buckner, has handled personally the greater part of the many contracts under which all military explosives were produced. These contracts called for the production of 1,800,000,000 pounds of standard explosives valued at $1,020,000,000 and special explosives and accessories worth $206,000,000. The greater part of these contracts provided for cash advances which at one time exceeded $100,000,000 unsecured except by the general credit of the company as shown in its statement. Few salesmen have undertaken such large work, none has been more successful. No dispute has arisen with respect to any of these munition contracts, nor has it been necessary to modify their terms after execution. The innumerable specifications for different kinds of explosives and accessories has made it necessary to employ a force of men in arranging

modifications that became desirable to customers during the progress of the war, but happily all of these changes were made to their entire satisfaction, with no consequent delay and without necessity of modifying the general terms of contracts. No additional charge has been made on account of any change in original terms or specifications.

At the beginning of hostilities the Military Sales Department showed great foresight in establishing a price for powder and terms of payment that enabled the company to do great work rapidly. This price, though high, was not more than 25 per cent. higher than that applying to foreign business before the war, but differed from the latter in the fact that factories to be used in the completion of war contracts must be constructed out of the purchase price of the powder itself. However, the question of price cannot be dealt with fairly without considering the war period as

a whole. Taking military cannon powders, by far the most important in quantity sold—1,398,700,000 pounds—it is to be observed that the average cost to the United States Government and the Allies for powder contracted during the four years, 1915-1918, was 6½% higher than the price fixed by Congress for several years prior to the war. The contracts with the United States Government, made in the years 1917 and 1918, were at prices 10.7% lower, and for 1919, 16.8% lower than that prevailing before the war. At all times a uniform price was made to the United States and the Allies. Inquiry has failed to reveal another case where a war essential has been sold below pre-war price. It must be remembered that during these four years the cost of all raw material has advanced tremendously. Dur-

ing the last year of the war, their cost was 132% higher than for the year prior to the war.

This enormous saving is largely attributable to the very efficient work of our Chemical and Mechanical Research Departments, including the laboratories of the company, with the most intimate and earnest coöperation of the men in the factories themselves. The Chemical and Mechanical Research Departments numbered 212 men prior to the war, while at the end of the year 1918, 987 men were employed in this service. The economies effected, by them and by those working at the factories, have not been questions of dollars and cents alone, as conservation of the materials saved was of prime importance to the world at large. Thus the reduction in consumption of alcohol was the equivalent to the saving of 10,400,000 bushels of corn. The total expenditure for experiment and research during the four years, 1915-1918, amounts to $3,360,000.

Outside of the company the Development Department seeks out new products, and examines into the merits of new fields of operation. To compensate the loss of munitions business investigations and studies of 100 separate industrial subjects have been made. These investigations have been valuable in the development of the

military powder business also, as the source and character of raw materials was under constant development throughout the war. The Development Department has handled

its work in a masterful manner and deserves great credit for results obtained.

Among the accessory departments that have contributed importantly to the success of the military program, mention should be made of the Traffic Department. Their work covered supervision of shipping to and from Chile for the maintenance of an adequate supply of nitrate of soda at a time of greatest congestion and, in the earlier years, of uncertainty of operation of the Panama Canal. The planning of railroad facilities in the United States for the assembling of materials for construction and operation has been a difficult task, but there has been no case of failure in this important work, except for a brief period when the control of fuel by the United States Government made independent action impossible. Results have been attained by resorting to many ingenious expedients and by ceaseless attention to every detail of every shipment. Foresighted provision of shipping facilities, especially during the early part of the war, resulted in savings estimated at $18,700,000.

The Medical and Welfare Departments of the company have played an important rôle during the war years. While past experience had furnished much data concerning the injury to health of employees manufacturing our products, production on larger scale presented new and difficult problems. To these have been added the study of several new and more or less poisonous products that were introduced to our line of manufacture. All of these problems have been satisfactorily met, but good health under factory

conditions was a small part of the medical and welfare work. The expansion of business required the massing at isolated points of may thousands of men, their families and the necessary trades people. The furnishing of pure water and good food, the disposition of sewage and waste, all presented difficult problems; failure of solution might have brought about grave complications.

In these new towns, where crowding was unavoidable, no case of epidemic even in mild form has occurred, excepting, of course, the all-prevalent influenza. There has been no delay or loss of product through illness of employees. This good record is due to the action of the Medical Department in preventing trouble by its anticipation.

In connection with the rapid assembling of employees at points of greatest activity, it was necessary to establish commissaries, mess halls, restaurants, hotels, etc., for the temporary accommodation of the men. The operation of these accessories in the chief centers cost $8,000,000, and in the years 1916-1917-1918, 25,000,000 meals were served. Exclusive of the Government plant at Nashville, the rental of company houses built during the war totaled over $900,000. The sanitary conditions of all these houses were cared for by the Medical and Welfare Departments in a highly-satisfactory manner.

The accomplishment of the above results has been made possible by a well-organized accounting, auditing and financial system under management of the Treasurer's Department. During the war period this department has increased

from a force of 213 men and women to over 1,186. Cost sheets of all products have been issued promptly, an important item in a situation where knowledge of cost and details of operation has been so necessary for economy in manufacture. The enormous business of receiving and checking goods, approving and paying vouchers and freight bills (for the year 1918 estimated at 850,000 separate items), as well as the collection of accounts, has been handled with greatest despatch. At no time has the company been in any way embarrassed or troubled by the failure of the accountants to carry on smoothly the transactions that were necessary in such great operations.

The Treasurer's Department has handled the finances of the company with equal skill. Forecasts of probable financial conditions extending twelve months in advance have been maintained and revised every month. All the numerous financial problems, involving not infrequently items of several millions of dollars, have

been forecasted and reported in detail in proper season for consideration by the Executive and Finance Committees and by the Directors. The business of the company has brought in large amounts of cash, for which temporary employment has been necessary pending its use for purposes originally planned. This has led to purchase of securities of all kinds amounting to $297,000,000. Excepting Liberty Bonds, none of these investments have been resold at a loss. There remains in the treasury at present $1,705,000 only of these investments. The company has been the purchaser of $112,000,000 of the securities of the Foreign Allied Governments. It has subscribed to $157,000,000 of

various offerings of the United States Government, of which $121,700,000 have been allotted and purchased. The management of the Treasurer's Department, and the financial policy adopted by the Executive Committee and Finance Committee on the Treasurer's recommendations, are largely responsible for the excellent credit of the company upon which its great business has been founded. In the great transactions of the war years the treasurer has made no call upon the stockholders for funds, no sale of the company's obligations has been made and current borrowings, all without collateral, have never exceeded $10,000,000. The distribution of regular dividends has been maintained throughout the period.

The work, above outlined, has been accomplished by the joint efforts of a very able body of men. Those primarily responsible for the success of the campaign as a whole are the members of the Executive Committee, viz.:

IRENÉE DU PONT, *Chairman.*
H. FLETCHER BROWN, *Smokeless Powder Operations.*
ROBERT R. M. CARPENTER, *Development Work.*
FRANK L. CONNABLE, *Special Purchasing.*
WILLIAM COYNE, *Sales.*
LAMMOT DU PONT, *Miscellaneous Manufacturing Operations.*
HARRY G. HASKELL, *Explosives Manufacturing Operations.*
JOHN J. RASKOB, *Finance.*
FRANK G. TALLMAN, *Purchases.*

All of whom have held office throughout the four-year war period. Each of these men, excepting Mr. Irenée du Pont, who occupies a position equivalent to that of General Manager, though not so named, is at the head of the important department indicated in addition to his duties as a member of the Executive Committee and Vice President. During the four years, 1915-1918, this Executive Committee has held 334 formal meetings and has acted upon 5,760 subjects, of which 3,886 were embodied in written reports.

It is appropriate to mention also the heads of the other chief departments:

COLONEL EDMUND G. BUCKNER, *Military Sales.*
MAJOR WILLIAM G. RAMSAY, followed by MR. HARRY M. PIERCE, *Engineering.*
DR. CHARLES L. REESE, *Laboratories and Research.*
DANIEL CAUFFIEL, *Real Estate.*
WILLIAM A. SIMONTON, *Traffic.*
JOHN P. LAFFEY, *Chief Counsel.*

These sixteen men have been constant in their attention to the affairs of the company and have ably managed the great work entrusted to their joint and individual direction. They have been supported by an efficient corps of assistants whose number at the beginning of the war was 94 men, receiving annual salaries of $4,200 or more. At the cessation of hostilities there were 259 such men in the employ of the company. During the four-year period nearly 90% of the original men in the above group, excluding those pensioned or resigned for military service, have advanced themselves,

and none has failed to make good at the work allotted him. Among the greater number that have come into the employ of the company during the war period, nearly 70% have been advanced, and there is no case of discharge for cause or for failure to make good in the work allotted. To the wonderful performance of these men is traced the chief source of the very satisfactory results obtained for the stockholders.

In calling attention to the leading men in the company and to their uniform success in carrying out their work it is not intended to minimize the importance of other employees at one time numbering over 112,000, nor to leave unrecognized

their share in the whole. This large body of men, the greater number of whom were new in their employment with the company, have carried their burden and executed their work in a highly satisfactory manner. Though 8,497 of them yielded to the call to the colors during the war, it was necessary for the company to ask for exemption from military service for the greater part of its employees. This exemption was a keen disappointment to many, especially to the younger men; it is therefore proper to acknowledge the superior importance of their civilian work, the satisfactory way in which their duties were carried out and the very marked effect that their success has had upon the termination of the war.

The record of the company during the war would not be complete without notice of losses sustained through death,

fortunately very few in number, exclusive of those killed in accidents.

The great factories built for the filling of the European orders of 1914 and 1915 were almost completed when death took from us Major William G. Ramsay, Chief Engineer of the company, whose brilliant work was the foundation of the success of our original construction program and consequently of the entire performance. The organization founded by him, under the able management of his right-hand man, Mr. Harry M. Pierce, has carried to completion the great work that stands a monument without equal to the honor of its originator and to that of his worthy successor.

On October 18, 1918, the company suffered great loss in the death of Mr. Hamilton M. Barksdale, for many years prominent in the company's affairs. His most active work was in the manufacture of high explosives and the administration of that department. In later years as Vice-President and member of the Finance Committee he became one of the strongest and most respected advisers in the planning of the policy of the company and in the administration of its affairs. To Mr.

Barksdale's fine qualities, his unselfishness, his patience, his thoroughness, his candor, in short to his exemplification of all that is noble, can be traced much of the splendid esprit de corps of the duPont organization today.

While a brief description of the work accomplished during the four years past may serve to better inform the.

stockholders of the conduct of the officers and employees of their company, it is in the financial result of the four years' campaign that they are most interested. This result is the measure of success or failure, and it may be summed up in a very few words.

The stock of E. I. du Pont de Nemours Powder Company, the predecessor of E. I. du Pont de Nemours & Company, sold during the early months of the war at $125 per share. The share of debenture stock and two shares of common stock of E. I. du Pont de Nemours & Company which were exchanged for the former security are worth in today's market (December 31, 1918) $593, or an increase in value of 374%. In the meantime (1915-1918) the total dividends on the common stock of E. I. du Pont de Nemours Powder Company and on the exchanged securities of E. I. du Pont de Nemours & Company have amounted to 458% on the par value of the original stock. It is difficult to imagine a more satisfactory financial result, especially in view of the fact that the liquidation of the balance of the military powder investment as it stands today cannot materially alter the conditions above recited. The result has been accomplished without friction with customers, one minor law suit concerning a claimed commission being the only dispute on record. All construction work has been done strictly in forecasted time and without material overrun of estimate, while economies effected for the joint benefit of customers and stockholders have been enormous.

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In seeking means of continuing this satisfactory conduct of the company's business, too much cannot be said in favor of the bonus plan of the company. The officers and directors

believe it has been of great value in securing and retaining at highest efficiency the best men in the explosives industry. The bonus plan furnishes for distribution among employees of recognized merit a number of shares of stock of the company each year. As the amount of this bonus stock is based on earnings, many shares were available for distribution during the years 1915 to 1918. In the years 1915, 1916 and 1917, there was awarded as B bonus a total of 6,286 shares of common stock of E. I. du Pont de Nemours Powder Company, 24,301 shares of debenture stock of E. I. du Pont de Nemours & Company, 42,839 shares of common stock of E. I. du Pont de Nemours & Company. For the year 1918, 8,006 shares of debenture stock of E. I. du Pont de Nemours & Company and 8,680 shares of the common stock of E. I. du Pont de Nemours & Company (cost value $3,162,493.72) have been awarded for distribution as B bonus to 2,329 employees by the Executive and Finance Committee and finally approved by the Special Committee of the Board of Directors. The total cost of these securities for the four years, 1915-1918, has been $16,379,914.11. The merits of the plan have been recognized by the officers and directors of the company and its predecessor for many years. Formerly the directors themselves owned a majority of the common stock and, throughout, other stockholders have been informed as to the operations of the plan, therefore it has not been thought necessary to ask for specific action to approve bonus granted at the annual meetings. However, to the surprise of many directors, a law suit has been brought by a small number of stockholders attacking the validity of the bonus plan. This action was the more surprising because the suit was not brought until these

stockholders had been enriched, without effort on their part, by dividends almost equal to the total bonus paid out to the workers during the first two years of the war period. It is to be noted also that the leading stockholders in the suit have participated, both as officers and directors of the company, in the establishing of

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the bonus plan and in its administration. On account of this law suit a specific ratification and approval of the bonus plan and the administration thereof was asked at the last stockholders' meeting. Of the total shares represented by person or proxy 414,263 were recorded in favor of such ratification and none against, a favorable vote of 100%. (Seventy per cent. of the voting stock was represented at this meeting.) At the coming annual meeting the stockholders will be asked to ratify and approve the administration of the bonus plan during the year 1918 and its continuation in the future.

Since the beginning of the war the officers of the company have been active in preparation for peaceful pursuits and, as opportunity has offered, many new projects have been investigated in order to supplement the former commercial business of E. I. du Pont de Nemours Powder Company. Over one hundred different subjects have been under scrutiny and many are still followed actively. The principal investments already made are:

First.—The manufacture of Py-ra-lin, the chemical relation of which to military powders is such as to make it a very desirable addition to the list of our

products. Entry into this business was through the purchase of the Arlington Company, already a successful manufacturer of many years standing. The business has expanded to approximately double its output when taken over in 1915, and under peace conditions has great promise of further development.

Second.—The manufacture of paints, varnishes and colors. The relation of this industry to explosives lies in a common interest in the production of certain so-called "heavy chemicals," while a more intimate tie exists between the paint and color industry and the so-called chemical mixture business in which the Du Pont Company has been engaged for many years. The manufacture of colors has also a close relation to the produc-

tion of dyes. Our entry into the paint and color industry has been through the purchase of the following interests:

Harrison Brothers & Company, Inc., a concern well known and of long standing, for a period even longer than the life of the Du Pont interests.

Cawley Clark & Company.

Beckton Chemical Company.

Bridgeport Wood Finishing Company.

Flint Varnish and Color Works.

New England Oil, Paint and Varnish Company.

These purchases have given importance to this line of business and have established a working trade

at the outset. The acquisition is further attractive in the great field opened for the economical use of by-products and interchange of facilities.

Third.—Dye manufacture. The chemical composition of many dyes being similar in nature to that of a number of modern explosives, makes study and development of the dye industry an appropriate adjunct to the main business of E. I. du Pont de Nemours & Company. The industry being comparatively new in this country, it was decided to obtain rights to patents and processes, starting in the industry without a nucleus of existing business and contrary to the plan followed in other cases. It was originally thought that a part of the apparatus for the installation of the dye industry could be diverted from the manufacture of explosives at the termination of the war, but continuation of hostilities has negatived this expectation. The company is already producing indigo in large quantity and is producing fair amounts of many other dyes, all of a satisfactory quality. The business is complex but of great interest and promise.

Fourth.—Manufacture of motors. The interest of certain officers of the company in the motor field was engaged for many months prior to the making of an investment by the company. While there is no immediate relation be-

tween the explosives industry and the manufacture of motors, this investment was made in such a way

as to give opportunity for our financial organization to be of service, and at the same time increase greatly our financial strength. The large engineering and construction forces of our company, the development, legal and accounting department facilities, coupled with the demands of the motor industry for talent of that kind, has furnished a connecting link which seems desirable in all investments. The consumption of paints, varnishes and fabrikoid in the manufacture of automobiles gives another common interest. In entering this field it was necessary to make investment in a thoroughly developed property. This has been found in the General Motors Corporation, already equipped in a most thorough manner with technical men of experience for the proper conduct of its business. The officers of E. I. du Pont de Nemours & Company are fortunate in having secured a 27.6% interest in this corporation, as it now stands equipped with factories for producing all kinds of cars, tractors and trucks, together with the greater part of the accessories needed in their manufacture. We feel fortunate also in our partnership with Mr. William C. Durant, President of the General Motors Corporation, and the father and leader of the motor industry, not only in the United States but in the world. This alliance leaves the management and general conduct of the General Motors Corporation as heretofore, except that the responsibility for financial management is now shared by the officers of our company. The general function of the Du Pont interests is advisory only, though already there has sprung up an intimacy between the organizations that

promises great benefit through the exchange of facilities and use of important men for specific duties to which they are particularly well adapted.

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Great activity in military lines has not left undeveloped the commercial business of the company. Sales that averaged about $26,000,000 gross in the years 1913 and 1914 have increased until the commercial business of the year 1918 totaled over $72,000,000. This amount is exclusive of sales of companies in which we hold a minority interest, such as General Motors Corporation; the gross business of that company in the year 1917 amounted to about $300,000,000. To this steadily increasing commercial business the officers and directors look with confidence for the continued success of the company.

Stockholders may be fearful lest the sudden cutting off of munition orders may bring about a reduction of earnings, jeopardizing dividends and the strong financial position of the company. To allay such fears it is well to point out that, prior to the European War, the company had been engaged in commercial business for 113 years, of which 8½ years only might be termed war years. Therefore, its history is not one of a military establishment. Preparation for the great struggle just ended was made under conditions of peace. After liquidation of munition business the company will hold about $200,000,000 of assets, from which, under normal conditions, earnings of 11½% are to be expected, as this was the average maintained for many years before the war. These earnings, $23,000,000 compare favorably with present dividend requirements of 6% on debenture stock and 18% on the common stock, or

$14,250,000. Military powder business prior to the war amounted to about 5% of the gross earnings of the company, so that the complete loss of munition orders cannot prove a very serious blow to the future of the company.

On January 4, 1918, Du Pont American Industries Company was organized under the laws of the State of Delaware, for the purpose of holding the investment of E. I. du Pont de Nemours & Company in General Motors Corporation and other companies in which interests have been purchased. All the stock of the Du Pont American Industries is owned by E. I. du Pont de Nemours & Company.

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On December 16, 1918, the Du Pont Chemical Company was organized under the laws of the State of Delaware, for the purpose of purchasing the military powder plants and some other manufacturing companies of E. I. du Pont de Nemours & Company. All the common stock of this company is owned by Du Pont American Industries Company; the preferred stock of Du Pont Chemical Company has been distributed as dividend to stockholders of E. I. du Pont de Nemours & Company.

Following the precedent of the previous year, the directors of the company have declared a special dividend of 2% on the common stock of the company, recommending that the amount received be donated to the Red Cross Fund. Such disposition of the dividend was entirely vol-

untary on the part of the stockholders, but it is believed that the American Red Cross benefited to the extent of a very large percentage of the total.

In line with the above action a special dividend of 1% on the common stock was declared with recommendation that the stockholders donate the amount so received to the United War Work Campaign.

For the year 1918 the directors have authorized the distribution to the common stockholders of four quarterly cash dividends of 4½% each, a total of 18% for the year and a dividend in preferred stock of Du Pont Chemical Company of 5%, in addition to the above mentioned special dividends totalling 3%. No special dividend was declared at the end of the year though the earnings of the company considered alone would have justified such action. However, uncertainties in the Federal Tax situation and the time required for liquidation of the investment in materials used in military powder business made conservative action on the dividend advisable and the directors have deferred the question of determining to what extent, if any, the 1918 surplus may be distributed.

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The complete dividend record of the company and its predecessor, E. I. du Pont de Nemours Powder Company, follows:

E. I. DU PONT DE NEMOURS POWDER COMPANY:

1904	½%
1905	3½%
1906	6½%

1907		7%
1908		7%
1909		7¾%
1910		12%
1911		12%
1912		12%
1913		8%*
1914		8%
1915		22%**
1916		6%
1917		6%
1918	$10 par value	6%***

E. I. DU PONT DE NEMOURS & COMPANY:

1915	30%
1916	100%
1917	51%****
1918	26%*****

*Does not include 48.474% paid in securities of Atlas Powder Company and Hercules Powder Company.

**Does not include distribution of two shares of common stock of E. I. du Pont de Nemours & Company for each share of common stock of E. I. du Pont de Nemours Powder Company.

***Based on par value of $10.

****Includes 1% Red Cross dividend paid June 23, 1917.

*****Includes Red Cross 2% Dividend, 1% United War Work Dividend and 5% Dividend in Preferred Stock of Du Pont Chemical Company $5 par value.

The number of stockholders and those of them employed by the company is shown in the following tabulation covering a number of years. The record from 1907 to 1914, in-

clusive, is of E. I. du Pont de Nemours Powder Company; that for the later years, of its successor, E. I. du Pont de Nemours & Company:

1907—	809,	of whom	218, or 27% were employees
1908—	955,	"	200, or 26% " "
1909—	1,335,	"	524, or 39% " "
1910—	1,695,	"	764, or 45% " "
1911—	2,163,	"	990, or 45% " "
1912—	2,697,	"	1,440, or 53% " "
1913—	2,935,	"	1,047, or 36%* " "
1914—	3,093,	"	1,184, or 38% " "
1915—	3,840,	"	1,122, or 29% " "
1916—	4,221,	"	1,448, or 34% " "
1917—	5,409,	"	2,445, or 45% " "
1918—	7,203,	"	3,220, or 45% " "

*Decrease due to loss of employees through organization of the Hercules Powder Company and Atlas Powder Company.

Respectfully submitted,

PIERRE S. DuPONT,
President.

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New York
Chicago
Detroit
St. Louis
Cleveland
Baltimore
Pittsburgh

HASKINS & SELLS
CERTIFIED PUBLIC ACCOUNTANTS
Cable Address "HASKSELLS"
30 BROAD STREET
NEW YORK

San Francisco
Los Angeles
Seattle
Denver
Atlanta
Watertown
London

NEW YORK, February 28, 1919.

E. I. DU PONT DE NEMOURS & COMPANY,
Wilmington, Delaware.

We have audited your general books and accounts and those of your subsidiary companies for the year ended December 31, 1918, and, subject to not having examined the minutes of your governing bodies,

WE HEREBY CERTIFY that the accompanying Consolidated General Balance Sheet as of December 31, 1918, and related Summary of Consolidated Income and Profit and Loss for the year ended on that date are correct.

HASKINS & SELLS,
Certified Public Accountants.

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E. I. DU PONT DE NEMOURS & COMPANY WITH SUBSIDIARY COMPANIES
COMPARATIVE BALANCE SHEET, DECEMBER 31st

ASSETS	1915	1916	1917	1918
Cash, Accounts Receivable, Materials and Finished Product	$64,894,106.81	$82,325,103.43	$145,028,674.47	$222,633,581.86*
Investments in short term notes and quickly marketable securities	49,332,874.22	57,172,510.85	30,679,886.67	1,705,918.65
Securities held for permanent investment	21,295,367.92	26,540,679.55	16,885,099.89	18,842,595.79
Realty, not including Plant Real Estate	516,697.85	504,023.39	508,420.70	545,998.98
Permanent Investment in manufacturing property, Patents, etc.	122,224,173.95	51,309,323.10	70,291,113.63	65,118,201.79
Total Assets	$258,263,220.75	$217,851,640.32	$263,393,195.36	$308,846,297.07
LIABILITIES				
Accounts and Bills Payable, including Accrued Dividends on Debenture Stock	$9,108,627.58	$7,883,623.00	$22,750,517.19	$38,337,762.70
Deferred Liabilities and Credit Items, including estimated Federal Taxes	4,102,673.95	19,461,171.41	22,125,661.51	20,478,956.55
	$13,211,301.53	$27,344,794.41	$44,876,178.70	$58,816,719.25
CAPITALIZATION				
Debenture Stock Issued	$60,774,033.33	$60,813,950.00	$60,813,950.00	$60,813,950.00
Debenture Stock (held in reserve)	45,006.11	45,006.11	45,006.11	.....
Common Stock Issued	58,854,200.00	58,854,200.00	58,854,200.00	58,854,200.00
Common Stock (held in reserve)	31,425.90	31,425.90	31,425.90	.....
	$119,704,665.34	$119,744,582.01	$119,744,582.01	$119,668,150.00
Advance Payments on Contracts and Reserves for Depreciation, Accidents, etc.	$116,379,036.81	$42,195,226.28	$54,617,863.45	$62,060,537.15†
Surplus	8,968,217.07	28,567,037.62	44,154,571.20	68,300,890.67
Total Liabilities	$258,263,220.75	$217,851,640.32	$263,393,195.36	$308,846,297.07

*Includes advances to and open current accounts with affiliated companies amounting to $50,179,521.50.

†Includes $12,643,703.36 for adjustment of materials and supplies to market value December 31, 1918. A portion of this amount may be recovered through claims arising from cancellation of contracts.

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E. I. DU PONT DE NEMOURS & COMPANY WITH SUBSIDIARY COMPANIES
COMPARATIVE INCOME ACCOUNT, YEARS ENDING DECEMBER 31st

	1915	1916	1917	1918
Gross Receipts from sales	$131,142,015.35	$318,845,684.76	$269,842,464.75	$329,121,607.64
Net Earnings after providing for Amortization	$57,399,899.61	$82,013,019.90	$49,112,952.65	$47,221,367.68
Profit and Loss on sale of Real Estate, Securities, etc, and Extraordinary Adjustments	440,857.92	94,672.65	145,708.93	4,123,292.96*
Net Receipts	$57,840,757.53	$82,107,692.55	$49,258,661.58	$43,098,074.72
DEDUCTIONS				
Earnings capitalized in reorganization, October 1st, 1915	$29,955,799.36	.....	.....	.....
Interest on Funded Debt	583,450.00	.....	.....	.....
Debenture Stock Dividends	1,715,032.50	$3,648,222.00	$3,648,822.00	$3,648,822.00
Common Stock Dividends	24,130,222.00	58,854,200.00	30,015,642.00	15,302,092.00
Dividends on Subsidiary Company Stocks	6,450.00	6,450.00	6,664.00	841.25
Total Deductions	$56,390,953.86	$62,508,872.00	$33,671,128.00	$18,951,755.25
Surplus for the Year	$1,449,803.67	$19,598,820.55	$15,587,533.58	$24,146,319.47
Accumulated Surplus to Date	$8,968,217.07	$28,567,037.62	$44,154,571.20	$68,300,890.67

* Indicates Loss.

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Defendant's Exhibit (DP) No. 75

5777

"A" File: ID-37

May 3, 1918.

DEVELOPMENT DEPARTMENT:

I am convinced that we should make a special effort to extend the operations of the Development Department, looking into new industry which we might profitably enter, as an offshoot from our present business, and to find an outlet for the probable surplus products after the war is over. This study will require so much time that we should arrange to promptly take on additional capable men.

Irenee du Pont

Defendant's Exhibit (DP) No. 76 5778

July 24th, 1915.

TO FINANCE AND EXECUTIVE COMMITTEES

FROM TREASURER

Acting on report No. 5400 from Mr. Connable the Executive Committee on June 17th, 1915, passed the following resolution:

> "It was resolved and unanimously carried that the communications be referred to the Treasurer with the request that he make a careful study of the financial policy of the Company and report to this Committee within six months."

In approaching this subject it seems well to recall the steps previously taken in this direction.

In the year 1911 the directors approved the recommendations contained in a report from P. S. du Pont, Treasurer, providing a plan for refinancing our Company with two classes of securities; a senior security known as "DEBENTURE STOCK", and a junior security—common stock. A special meeting of stockholders was called for June 26th, 1911, to ratify action of the directors and to pass resolutions necessary to amend our charter for the consummation of the plan. On June 21, 1911, the Circuit Court of the United States entered an interlocutory decree in our so-called Government Suit, and thereupon our attorneys advised us it was highly

desirable that matters be left in statu quo and no changes be made in our charter pending final decision of this suit. This resulted in the meeting of stockholders, called for June 26th, 1911, adjourning without acting on the proposed plan. The final decree, as entered, involved the sale of a substantial portion of our properties to the Hercules Powder Company and the Atlas Powder Company, and this coupled with the work and uncertainties involved in adjusting ourselves to these new conditions made it seem desirable to indefinitely defer plan for a financial reorganization of our company.

The DuPont Company of the future should be a much larger corporation than the Du Pont Company of the past. We are now in the position of having a large and splendid organization, thoroughly proficient, as demonstrated in the results now being accomplished, with ample capital to properly finance new undertakings which it will be necessary to enter in order to properly employ this larger organization. Our total assets in the future will doubtless exceed $120 - 000 000.00 as against $75 000 000.00 in the past. The capital necessary to build our assets up to this larger amount may be supplied out of earnings on our present abnormal business. The capitalization of our company is now unsuited for this larger organization and requires radical change. If we retain, say, but $45 000 000.00 of our earnings for the expansion of our business, it means the common stockholders will not receive at least $45 000 000.00 which would otherwise be declared to them in cash dividends. In lieu of this cash dividend, it would seem well to have our reorganization plan provide a means of declaring a dividend of this amount payable in some form of security which our

common stockholders can sell and dispose of should they so desire without surrendering any part of their interest in the company's earnings which would be the case should they sell part of their common stock.

RECOMMENDATION

After very careful thought and consideration my recommendation is as follows:—

1. Organize a new corporation under the laws of the State of Delaware to be called E. I. du Pont de Nemours & Company, hereinafter called "Delaware Corporation", with an authorized capital of $240 000 000.00 divided into $160 000 000.00 par value of 6% cumulative non-voting debenture stock and $80 000 000.00 par value of common stock.

2. This new Delaware corporation to purchase all the assets, property, contracts and good will and assume all the liabilities of E. I. du Pont de Nemours Powder Company hereinafter called

"New Jersey Corporation", for the sum of $120 000 000.00 payable as follows: $1 484 100.00 in cash, $59 661 700.00 par value in said debenture stock and $58 854 200.00 par value in common stock (being all of the stock of the Delaware corporation to be issued at this time).

3. The New Jersey corporation to declare a dividend of 200% to their common stockholders payable in Delaware corporation common stock at par.

4. The New Jersey corporation to offer to purchase all its outstanding bonds and stock as follows:

a. $14 166 000.00 par value 4½% bonds to be purchased at par payable in Delaware corporation debenture stock at par. Thus a person holding $10 000 of our 4½% bonds will receive in exchange $10 000 in 6% debenture stock, the interest on which at 6% per annum

amounts to	$600.00
as against a present income of 4½% on $10 000, or	450.00
This results in a gain of	$150.00

which is equal to an increase in annual income of 33⅓%. This offering seems so attractive as to almost insure acceptance on the part of our 4½% bondholders.

b. $1 230.000.00 of our 5% bonds to be called at 105 and interest under the provisions of the mortgage and paid for in cash. These bonds carry a sinking fund provision under which $124 000 per annum are retired. Bonds mature in the year 1922.

All bonds purchased under subdivisions (a) and (b) shall be cancelled and retired.

c. $16 068 600.00 par value 5% cumulative preferred stock to be purchased at par payable in Delaware corporation debenture stock at par. A person holding $10 000 par value of our preferred stock will receive in exchange $10 000 in 6% debenture stock, the interest on which

at 6% per annum equals	$600.00
as against a present income of 5% on $10 000, or	500.00
resulting in a gain of	$100.00

which is equal to an increase in annual income of 20%. This offer should be most attractive to our preferred stock-

holders for the reason that in addition to an increase of 20% in annual income through exchanging, they receive a much better security in the 6% debenture stock than they now have in their 5% preferred stock for the reason previously stated that there will be no mortgage or other fixed lien ranking pari passu or ahead of the debenture stock, whereas our preferred stock now follows $15 396 000.00 of bonds. It is true that the voting privilege is surrendered, but this is immediately regained in case of bad management. The proposed debenture stock is fully described on page 6 of this report.

Reasons for Incorporating New Company Under Delaware Laws

Our previous plan was to amend our charter to accomplish our financial reorganization, but our legal department point out that it will be much simpler and is only a short step further to form a new company. This gives us opportunity to go back to our original name, i.e., "E. I. du Pont de Nemours & Company" and to incorporate under the laws of the State of Delaware. From a sentimental standpoint these are both desirable, but more substantial reasons are pointed out by the legal department as follows:—

1. To amend our charter will require a special meeting of our stockholders to create debenture stock, which debenture stock when created will follow our two bond issues and rank even in lien with our present preferred stock and, therefore, will not be as attractive in an exchange offering as will the securities of a new company whose debenture stock will have no mortgage or other fixed lien ranking prior to or pari passu with it. Later a second meeting of

stockholders will be necessary to again amend our charter to retire the preferred stock.

2. Our charter with its amendments is now so voluminous as to be cumbersome.

3. a. Owing to amendments to the general corporation laws

of the State of New Jersey, passed since the time of securing our charter, restrictions have been placed upon the powers of New Jersey corporations which appear to be undesirable, and which in our belief impose not only unnecessary restrictions, but are so uncertain in their meaning and effect as to leave the question of our corporate powers in great confusion.

b. The charges and taxes imposed by the State of New Jersey upon these corporations are considerably greater than those imposed by the State of Delaware.

c. The inheritance tax laws of the State of New Jersey are not only onerous, but are difficult to comply with and have been the occasion of much annoyance to our stockholders where death has intervened. There are no similar requirements under the Delaware statutes.

d. Under the constitution of the State of Delaware shares in the capital stock of Delaware corporations, when owned by persons or corporations outside of the state, are not subject to taxation by any law now existing or hereafter to be made.

e. There is no personal property tax on the stock of corporations imposed by any law of the State of Delaware.

f. Experience has demonstrated that the corporation law of the State of Delaware is less likely to be changed in any material and important particular than is the case in the State of New Jersey, and more certainty is, therefore, obtainable in incorporating under the laws of this State.

g. The plan will give the company the option to remove litigation to the Federal Courts of New Jersey, which may become a matter of considerable importance.

Reasons for and Description of Debenture Stock

In considering the financial reorganization of a growing industrial company such as ours one of the principal objects to strive for is to provide a senior security which will enable the company to obtain new capital at all times by paying the minimum rate therefor and one which will admit of the company's credit expansion keeping pace with its trade expansion.

Bonds are issued for limited amounts and must have fixed maturities, both of which features are objectionable as they unduly hamper the credit of a growing company.

American industrial corporations usually have large bond issues ranking ahead of their preferred stocks and after the payment of bond interest the margin of earnings to secure the preferred stock dividend is generally comparatively small. These preferred stocks have no preference except as against common stock, and it is usual to give the preferred shares a vote in order that they may have a voice in the maintenance of their slender margin of safety. To better illustrate the general status of American preferred stock, a list of the best known industrial preferred stocks

is attached hereto and perusal thereof clearly indicates that new capital cannot be obtained at a minimum rate through sale of this class of security.

England has apparently recognized the necessity for corporations to be in position to issue securities with some degree of elasticity and under Act of Parliament, passed in 1863, with various amendments since that time, corporations have been granted the right to issue "DEBENTURE STOCKS". A few of these debenture stocks are secured by mortgage, but as a rule the security is a floating charge on the entire properties and earnings of the company much the same as that of our 4½% bonds. The debenture stock has no vote and provision is usually made under which additional debenture stock may be issued from time to time, provided the total amount issued does not exceed a certain percentage of the total capital of the company. It is suggested herein

that our debenture stock be given equal voting privileges with the common stock in case the earnings of the company in any calendar year are equal to less than one and one-half times the interest accrued on the debenture stock issued and outstanding during such year; also, that the debenture stock be given sole voting privileges to the exclusion of the common stock in case of default in any quarterly dividend on the debenture stock continuing for six months. English debenture stocks have no vote, but the managers of Lloyds Bank Limited, the London City & Midland Bank and Messrs. Glyn Mills Currie & Company feel that this proposed voting privilege will strengthen the security in that it will give the senior security holder opportunity to come into the management of the property in a case of

trouble before the assets are so dissipated as to make rehabilitation of the company practically impossible, or such as to require an exorbitant amount of new capital. In order to secure such new capital debenture stockholders might have to subjugate their rights to those of such new capital.

If the above reasoning is correct it would seem that we should issue a senior security with proper degree of elasticity; that such security cannot be a bond and we are not warranted in justice to ourselves and successors to class it with American preferred stocks, that English debenture stocks are exactly in line with the nature of security contemplated and command a high position in the category of investment securities and we are, therefore, justified in selecting "DEBENTURE STOCK" as the name of our senior security.

Granting the selection of name is proper, the nxt step to consider seems to be the conditions under which this debenture stock is to be issued, on which please note the following comments:

NON-VOTING The ownership of an undertaking is usually that of the common stockholders; their capital assumes all the risk and is annihilated before any risk is assumed by the senior securities and the earnings are theirs after paying the agreed interest rate to the senior

security holders, who, therefore, may be considered as lenders of capital—not investers in the enterprise. The sole interest of the senior securities in the operations of the enterprise lies in the direction of insuring the safety of their own investment; this, however, is also one of the prime interests of the common stockholders, whose selfish inter-

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ests prompt them to secure their creditors in every way possible in order to be in a position to secure the maximum amount of capital at the lowest interest rate. Such being the fact, there is no warrant for giving voice in the management to the senior securities unless the nature of the undertaking or the methods of the common stockholders fail to produce that measure of safety that may be properly expected by a lender of capital.

RETIREMENT It would seem well to provide some figure at which the stock may be called in whole or in part for payment or retired in voluntary liquidation and it is suggested that provision be made under which this may be accomplished at $125.00 per share. On involuntary or forced liquidation, however, the stock will receive par.

It is, therefore, recommended that the charter of the company carry the following provisions regarding debenture stock:—

Debenture stock to be a six per cent. cumulative non-voting stock with the following conditions:

The debenture stock to have no vote on any question whatever, except (a) in the event that the company shall fail to pay any quarterly dividend thereon, and such default shall continue for the period of six months, in which event the debenture stockholders shall have the sole and exclusive right of voting to the exclusion of the common stockholders for the ensuing year and for each year thereafter until the company shall pay all accrued dividends on debenture stock, and (b) in the event of the earnings of the company in any calendar year amounting to less than one and one-half times the dividend accruing on the debenture stock issued and outstanding during such year, the debenture stockholders shall

have equal voting rights with the common stockholders, which voting rights shall continue until the net earnings for some future calendar year shall equal one and one-half times the annual dividend on the debenture stock,

issued and outstanding in such future year.

New debenture stock may be issued from time to time to provide fresh capital, to pay for properties acquired or to convert the company's surplus account in whole or in part into capital account provided, however, that the net assets of the company above all direct liabilities except capital stock liability shall never equal less than one and one-half times the par value of debenture stock issued and outstanding.

New issues of debenture stock may be offered for sale to debenture stockholders to the exclusion of the common stockholders, or may be offered to both the debenture stockholders and the common stockholders at the discretion of the directors, but in no event shall the debenture stockholders be excluded from participating in the issue, except in cases where the directors may find it necessary or desirable to issue debenture stock directly to the seller in payment for property, cash or other assets which the directors may find it necessary or desirable to purchase for account of the corporation, or where the directors may find it desirable to declare a dividend on the common stock payable in debenture stock. Nothing herein contained shall prevent the directors from selling debenture stock for cash to persons other than stockholders of the company after the same has been offered to and not taken by such stockholders.

No mortgage, specific lien or pledge may be placed upon the whole or any part of the property of the company

without the consent of 75% in amount of the debenture stock then outstanding. This prohibition shall not apply to purchase money mortgages or the assumption of mortgages or liens upon property purchased, nor shall it prevent the pledge of securities at any time, held and owned by the company, for the purpose of securing cash to be used in the ordinary course of the business of the company, provided such cash advances are secured on obligations of the company with maturities not more than three years from date thereof.

Any of the provisions of the certificate of incorporation

securing the debenture stock may be altered, amended or modified by and with the consent of three-fourths of the debenture stockholders concurring with two-thirds of the common stockholders.

Debenture stock may be called for payment in whole or in part at any time or retired in voluntary liquidation at $125.00 per share and accrued and unpaid dividends to date of such call or retirement; in involuntary liquidation it shall receive par plus accrued and unpaid dividends.

J. J. Raskob (Stamp)

Note. "11548" and "Received Aug 3 1915 J.A.H." are stamped at top of first page. "J.A.H.", "Exec. Com. #5548", and "Fin Com #5549" are handwritten at top of first page. "Return to Executive Committee Room 9069" is stamped along lower left margin of first page. Lines on document pp. 6 and 7 are hand drawn.

Defendant's Exhibit (DP) No. 77

Mtg. No. 364
March 31, 1915.

EXCERPTS OF A REPORT TO THE EXECUTIVE COMMITTEE DATED DECEMBER 31, 1914.

EXECUTIVE COMMITTEE,

The following is a brief report of the work done at the Experimental Station during the six months ending December 31, 1914.

—4—

INVESTIGATION OF THE MANUFACTURE OF CELLULOID:

Plans were completed and work commenced on the installation of an experimental celluloid plant at the Experimental Station under an appropriation granted to the Development Department. At the date of writing this report (March 31, 1915) the pot nitrating equipment is ready to operate and the mixing, rolling, pressing and sheeting machinery will be ready when needed.

PHOTOGRAPHIC FILMS:

A preliminary investigation was made at the request of the Development Department of certain formulae for the preparation of sensitized emulsions and methods of applying them to films. A comparison of the formulae with those found in the literature indicated that there are no especial secrets about the formulae, but that the difficulty of obtaining good emulsions lies rather in the mechanical operations. The first attempts to prepare negative emulsions were unsuccessful, but the difficulty was found to be local overheating. An arrangement for heating the emulsion was devised which gave fairly satisfactory results.

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MANUFACTURE OF DIPHENYLAMINE:

In the manufacture of smokeless powder it is considered necessary to add a small percentage of diphenylamine as a stabilizing agent. Diphenylamine has never been manufactured in this country in any quantity and, when the war conditions interrupted the supply from Europe, it became necessary at once to take steps toward its manufacture. The subject became of acute importance because of increasing smokeless powder output and the work was divided between the Eastern Laboratory and the Experimental Station. Manufacture was commenced at Repauno during December. Much difficulty has been experienced in securing satisfactory enameled digestors and yields so far have not been up to expectations. At the present time (March 31, 1915) with three digestors the capacity is about 12,000 pounds per month and additional apparatus is being installed with the expectation of bringing the output up to 50,000 pounds per month by May 1, 1915.

PRODUCTION OF TOLUENE:

The lack of sufficient toluene to keep the trinitro-toluol plants running at their capacity made it desirable that possible syntheses of this compound be investigated, and especially that a method of synthesis be developed which

could be utilized immediately. Experiments were started late in December and the indications are that the method selected will be feasible on a commercial scale.

Charles L. Reese

NOTE: In the upper right hand corner is stamped, "Noted I. duP." Two stamps appear in the center of the document—one reading "Executive Committee, Secy's No. 5257" and the other "passed by Executive Committee 4/12/15 Mtg. No. 365."

2515

Defendant's Exhibit (DP) No. 78

Serial No. L-518
July 26, 1915.

MR. R. R. M. CARPENTER.

DYESTUFF—INTERMEDIATES.

I am attaching hereto a number of charts showing products which we are either making or can make with very slight expenditures. For all of these products there is a demand in this Country and in fields which we have not, up to this time, entered.

BENZOL DERIVATIVES.

NITRO-BENZOL:

This product we are already making in large quantities. In addition to our own requirements there is quite an extensive demand for this material. Heller & Merz Co. use about six tons per year; Schoellkopf, Hartford & Hanna use about twenty tons per month. The Rubber Industry requires large amounts, the Goodyear Company alone using about twenty tons per month. As far as I can learn the rubber companies reduce this to aniline which is the product which they actually require. Of course we could supply either nitro-benzol or aniline, whichever was the more profitable to us.

META-DINITRO-BENZOL:

This product is already being made in our plants. Heller & Merz Co. use about twenty-five tons per year. Central Dyestuff & Chemical Company use about fifteen to twenty tons per year. This product is, evidently, used for the production of meta-phenylene-diamine, the latter product being

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used for the production of bismarck brown. The preparation of meta-phenylene-diamine from meta-dinitro-benzol

is just as easy as the production of aniline from nitro-benzol.

CHLOR-BENZOL:

We have already contracted for a large amount of chlor-benzol. The derivatives of most importance are para-nitro-chlor-benzol and chlor-dinitro-benzol. We have already had an inquiry for twenty-five tons of para-nitro-chlor-benzol. The para-nitro-chlor-benzol is used for the production of para-phenylene-diamine through para-nitro-aniline. Para-phenylene-diamine is the starting point for a number of dyes. In the manufacture of picric acid from chlor-benzol we will produce nitro products and it will only mean the separation of them at the proper stage in the operation in order to supply whatever demand there is for these products in the dyestuffs industry.

BENZIDINE:

This is produced by the reduction of nitro-benzol, a milder reducing agent being employed than that used for the production of aniline. It is the starting point for a large number of dyes. Schoellkopf, Hartford & Hanna alone require one hundred tons per year.

ANILINE:

We are already producing this in large quantities and the process has been worked out pretty well.

DIPHENYLAMINE:

Of the products derived from aniline diphenylamine is one of the most important. We are already producing this in large quantities.

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PARA-NITRO-ANILINE:

Produced from para-nitro-acetanilid which, in turn, is produced by the nitration of acetanilid or from para-chlor-benzol. This product is an intermediate in the production of para-phenylene-diamine which has been mentioned before under the chlor-benzole.

—3—

DIMETHYL ANILINE:

A plant is now being installed for the manufacture of this product. A large amount of it is used in the Dyestuff Industry. A considerable amount of diethyl aniline is also used. This could be manufactured by the same process as the dimethyl aniline.

ACETANILID:

This is produced by digesting together anilid and glacial acetic acid. There is quite a large demand for it in this country. Price in normal times is about 21¢ per pound. Present quotations are around 65¢.

HYDRO-CHINON:

This is used as a photograph developer. It is produced from aniline by oxidation with potassium bichromate and reduction of the quinone formed by sulphur-dioxide. Process is comparatively simple. The yields are very good. The market price at present for this material is about $4.50 per pound.

TOLUOL DERIVATIVES.

ORTHO-NITRO-TOLUOL:

This is produced together with para-nitro-toluol in the first stage of our T.N.T. manufacture. Keller & Merz Co.

use about thirty tons per year of a mixture of ortho and para. The ortho compound is easily separated from the para by distillation. By reduction of the ortho compound we obtain ortho toluidine and telidine, just as nitro-benzol yields aniline and benzidine.

PARA-NITRO-TOLUOL:

This compound, prepared as stated under ortho-nitro-toluol, yields para-toluidine and dipara-telylamine by the same re-actions that nitro-benzol yields aniline and di-phenylamine. Both compounds are extensively used in the Dyestuff Industry.

DINITRO-TOLUOL 1.2.4.:

This is produced in the second stage of our T.N.T. manu-

facture. We are already separating it in a fairly pure state. Heller & Merz Co. use about fifty tons per year. They probably require it for the production of alpha-toluyl-ene-diamine, which is produced from dinitro-toluol by the same re-action that nitro-benzol yields aniline.

PHENOL DERIVATIVES.

Para-nitro-phenol is used quite extensively as an intermediate in the production of photograhic developers metol, rodinal and amidol. It seems likely that a market could be developed for this product. We could manufacture it in the same apparatus as we use for picric acid, except that we would have to separate it from the ortho-nitro-phenol formed at the same time. Separation is easily accomplished, being nothing more than a distillation with steam.

PICRIC ACID

There is considerable demand for picric acid in normal

3719

times for the Leather Industry. If we should make para-nitro-phenol any residues of this product or of the ortho compound could be converted into picric acid and made salable.

NAPHTHALENE DERIVATIVES.

We are already obtaining quite large quantities of crude naphthalene at the Bayway and Deep Water Plants. Plans for a naphthalene subliming plant have been prepared and I understand that the Operating Department is now putting through Work Order Card for this project. We are already nitrating quite a large amount of naphthalene and I understand that the production of this material is to be increased. The alpha-mono-nitro-naphthalene yields alpha naphthylamine by reduction, just as nitro-benzol yields aniline. The Dyestuff Trade requires a large amount of alpha-naphthylamine.

Beta-Naphthalene-Sulphuric Acid:

This is an intermediate in the production of beta-naph-

thol for which there is a large demand. Schoellkopf, Hartford & Hanna use about one thousand tons per year. The re-actions involved in the production of beta-naphthol from naphthalene are the some as those for the production of phenol from benzine. It seems likely that the Plants now being erected in this Country for the production of synthetic phenol will turn to the manufacture of beta-naphthol when the war is over. As we have not taken up the manufacture of synthetic phenol it might be unwise for us to attempt to make beta-naphthol on account of the competition.

In connection with the demand for all of these products I am giving below a list of products which are classified in the quarterly statements of imports entered for consumption under Coal Tar Products, not medicinal and not colors or dyes.

Toluidine,
Xylidin,
Cumidin,
Binitrotoluol,
Binitrobenzol,
Benzidin,
Tolidin,
Dianizidin,
Naphthylamin,
Diphenylamin,
Benzaldehyde,
Benzyl Chloride,
Nitro-benzol,
Nitro-toluol,
Naphthylaminsulfoacids,) and their sodium
Naphtholsulfoacids,)
Amidonaphtholsulfoacids) or potassium salts
Amidosalicylic acid,
Binitrochlorbenzol,
Diamidostilbendisulfoacid,
Metanilic acid,
Paranitranilin,
Dimethylanilin.

Of a total of twenty-three compounds we are making, or are in a position to make with comparatively small additional expenditure, twelve. The value of the imports for the first half of 1914 was $306,083.00. Assuming that the products are all of equal value, there is a possible business of about $300,000 per year in the products which we would make. During the same period the imports of aniline oil amounted to 922,733 pounds, valued at $72,512.00, or, ap-

proximately, 8¢ per pound. Of aniline salts 1,590,916 pounds were imported, valued at $111,457.00 or, approximately, 7¢ per pound. The prices in the trade are usually about 3¢ higher than those given in the Government reports, but unless benzol goes to a very low price after the war we would not be able to meet the prices above given.

I wish to state that most of the information in this report is compiled from data collected by Mr. Richards, Mr. Rocker, and the Chemical Division. Additional information concerning trade requirements at prices is being collected as rapidly as possible.

Yours very truly,

A. D. Chambers.

Defendant's Exhibit (DP) No. 79 5799

Wilmington, Delaware,
January 15, 1916.

To — Executive Committee

From — William Coyne

At our Monday's Meeting, I propose to introduce the following resolution:

Whereas, we have approximately $22,000,000. invested in Hopewell, Virginia, Plant, and have orders to keep the Plant employed only to the end of November, 1916.

Therefore, be it resolved:

That, notwithstanding there is likelihood of further orders, the work of finding employment for that plant, either on present product, or different product or products, be most actively prosecuted:

That the United States Government be approached to ascertain if it would be possible to arrange for it to pay upkeep, depreciation, taxes, operating expenses, and six percent upon the actual investment, for not less than ten (10) years, provided we, at the conclusion of our heavy business, hold the plant subject to their use:

That the Committee has no more important duty before it than the conservation of $22,000,000., and until further notice the matter be given attention by the Executive Committee every second week, and a

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Progress Report to the Committee be made every second week by the Department in active charge of the subject.

WM. COYNE.

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NOTE: "Return to Executive Committee Room 9069" is stamped at the bottom of the document. A circular stamp reading Executive Sec'y No. 6093 appears in the top center of the document.

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Defendant's Exhibit (DP) No: 80

5801

January 18, 1916.

MR. R. R. M. CARPENTER:

SUBJECT: FUTURE USE FOR HOPEWELL PLANT:

Action Taken By Executive Committee,

At Meeting January 17, 1916.

REMARKS:

Communication from Mr. Coyne dated January 15, 1916, (#6093) attached hereto:

It was moved and unanimously carried that this communication be referred to the Development Department with a request that they submit to this Committee for consideration at our next regular meeting a progress report on what has been done to date in the matter of finding new uses for our Hopewell Plant, together with their recommendations, if any, as to what should be done in the future.

M. D. Fisher,

Sec'y. Executive Committee.

3/ Encl.

Defendant's Exhibit (DP) No. 81

5802

Serial No. S-576
January 19, 1916.

EXECUTIVE COMMITTEE,
Building.

HOPEWELL PLANT—PROGRESS REPORT

Gentlemen:

In accordance with the Advice of Action of the Executive Committee as of January 17th under the subject "Future Uses for Hopewell Plant" we are submitting attached hereto a letter from Mr. Edgar of this Department for your information.

Yours very truly,

T. S. CARPENTER, JR.
Assistant Director Development Dept.

WSC:M

Serial No. 576
January 19, 1916.

To Executive Committee
From Development Department

HOPEWELL PLANT — PROGRESS REPORT

PARTIAL LATER USE
OF HOPEWELL PLANT:

After making a careful inspection and study of the Hopewell Plant and its equipment we are impressed with the probable impossibility of finding any one industry capable of using a plant of this size through a long period of time. While the present demand for explosives may continue for sometime we may be reasonably assured that only a portion of the present equipment will be useful after the present European Wars are settled.

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GOVERNMENT REQUIREMENTS:

It may be that the United States would look with favor upon a plan for maintaining possibly a major portion of this plant in workable condition or in such condition that it can be quickly prepared for active manufacture in case of need. This plant is sufficiently inland to make its defense possible and is well located for the economic handling of cotton by rail to this point.

GENERAL STUDY:

In the majority of large manufacturing enterprises the major portion of investment is in land, rail and water facilities, including the installation of both broad and narrow gauge track, storage facilities for both raw materials and finished product, water supply and sewage, power

equipment and storage of coal, employes houses, offices and commissary, stables and the general equipment in cars, tools, repair shops, and buildings for housing the equipment which might be used for other manufacturing purposes. The direct investment in special equipment which in this case consists in the manufacture of Nitric Acid, Sulphuric Acid, purified and nitrated cotton, not including buildings, is a minor portion of the total plant cost.

The study of the possibilities at Hopewell is somewhat simplified by the size of the plant and its location. Only comparatively large industries need be at first considered on account of the plant facilities, as small industries, in which the specialized equipment is a factor, would not take advantage of an appreciable portion of the Hopewell plant facilities.

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RAW MATERIALS:

Hopewell is about 80 miles by water from Norfolk and no large sea-going boats can be expected to dock at the plant wharf. The present channel of the James River is dredged to a depth of 20-ft. and will require constant Government dredging to maintain this channel on account of the amount of silt deposited each year by the rivers and streams flowing into the James between Richmond and Norfolk. The channel is torturous so that it is improbable that its present condition will ever be greatly improved. It is possible to barge raw materials even with sea-going tugs but in the case of materials coming from Abroad this would involve a transfer at Norfolk, including this handling charge which in case of some materials should not be excessive. Hopewell is well located for the receipt of materials by water both from the East coast and Abroad.

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DISTRIBUTION OF FINISHED PRODUCT:

The economic point for rail distribution considering the whole of the United States and Canada is Detroit or in that vicinity. This has been clearly proven by the automobile industry and has been worked out by this Department in the case of box supply for our various plants. Hopewell is well located for distribution for the East coast and it should here be noted that the probable consumption of the products of Hopewell would be in the East due to manufacture.

GENERAL CLASSIFICATION OF MANUFACTURES:

Manufactures may be generally classified as mechanical or chemical. In mechanical manufactures the United States

is far in advance at present of any country in the world. In the chemical manufactures Germany is undoubtedly in advance of any country in the world. In considering the possibilities at Hopewell we believe the facilities are peculiarly adapted for chemical manufacture, although it is probable that in mechanical manufacture this location would be well adapted for the manufacture of paper and gray goods for use in the manufacture of artificial leather.

CHEMICAL MANUFACTURES:

In chemical manufacture Abroad one of the chief advantages is the low cost of labor. In some classes of work in Germany involving more or less skill, workmen receive 8c to 12c an hour as compared with corresponding rates of 18c to 22c an hour in this country under normal conditions. In all probability at the close of the present War there will be marked advances in labor rates due to a shortage of men. The Badische Company employed at the start of the War approximately 12,000 workmen in their plant, the first service call the German Army, we are informed, drew out 6,000, and the second call 3,000. Later it was found that

certain classes of work of the Badische Company was seriously affecting war supplies and some of the workmen were put back into the factories. This type of confusion was strongly manifest in the cyanamid industry in Germany when a large percentage of the workmen were drawn under arms and before they could be returned a number of men, some of whom were foremen or superintendents of branch operations in the factory, and one general foreman, were killed, or disabled so as to be unfit for factory work.

FERTILIZERS:

The manufacture of fertilizers at Hopewell presents certain marked advantages among which are: (1)—plant location near Norfolk with short haul of phosphate rock from Florida and South Carolina deposits, (2)—plant handling and storage facilities for large amounts of raw material, (3)—sulphuric acid manufacture, although this would require modification perhaps requiring major changes in equipment, (4)—good location for the receipt of potash from Abroad, (5)—location well adapted for shipments to the South, Baltimore District, Philadelphia District and the New England market, (6)—the plans for the future development of the fertilizer industry are in strong hands and I believe these interests would favor a location in the South for a large eastern central plant.

OTHER CHEMICAL MANUFACTURES:

There are a number of other chemical industries which would apparently be economical at this point either for partially treated raw materials or finished product such as artificial silk, celluloid, films, pyroxylin solutions, dyes and other coal tar products.

—5—

PAPER:

Under Exhibit "A" are shown specifications on 37 of the largest manufacturing industries in the United States at present, arranged in the order of their percentage earning on capital. From this table it will be noted that paper and pulp manufacture rank tenth in capital invested and show an earning on capital invested of only 7-6/10%, whereas fertilizers ranking as 37th in capital invested, show an earning of 11-4/10%, and chemicals ranking 28th in capital invested, show an earning of 15-3/10%.

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From the information so far obtained it appears that a larger profit is made in the manufacture of pulp than in the manufacture of finished papers, and that the manufacture of high grade linen and cotton papers are not at present earning a large return on investment. The study of the paper industry is a large one involving a great variety of product. There are three general classifications of wood paper: first, mechanically ground wood pulp paper as used for newspaper manufacture; second, sulphite paper which is made from wood stock and an acid treatment giving a strong fibre paper used for the manufacture of bags and wrapping paper; and third, soda pulp which is a wood product treated with an alkaline. Abroad sulphate pulp is used extensively. This sulphate paper is tough and would be particularly adapted for parcel post packages and expressage.

Mechanically ground wood papers require a considerable amount of power in their manufacture, and from the data collected to date, it would seem that the power cost is an important factor in the manufacturing cost, and that the

use of economically developed water power is of prime importance. It has been found in the limited study made to date that a number of newspaper manufacturers use a large percentage of auxiliary steam power, due principally to the growth of the industry and the lack of water power at plant locations during a portion of the year. It would seem that other things being equal, the companies located at large cheap water powers and having a cheap raw material supply of wood have a distinct advantage over their competitors.

The present digestor capacity at Hopewell could be well utilized in the manufacture of cotton pulp for use in the

manufacture of the better grades of paper if this material can be economically used to replace a portion of the rags now used in this industry. A study is now being made of this possibility to determine; first, what form of product could be used by the cotton paper trade; second, whether or not this material could be produced economically in competition with rags; and third, what volume of business could be expected for this use and the profit which may be hoped for.

It has been suggested that the acquisition of the Oliver De-linting Machine would be of advantage in controlling this possible market for cotton pulp and this subject is now being actively investigated.

RECOMMENDATIONS:

(1) In order to intelligently pursue the chemical side of this study the services of an industrial chemist of broad experience should be obtained and eliminate quickly unfruitful work and assist in the study of chemical industries economically possible at Hopewell.

(2) We would urge that this study be brought to the attention of all the heads of the Departments of the Company so that suggestions may be carefully considered and followed through in this study.

(3) We would further suggest that the proper officials of the United States Government be sounded as to the desirability of maintaining this plant in whole or in part for smokeless powder.

Approved by: Submitted by:

NOTE: A circular stamp appears in the center of the first page. RRM Carpenter is stamped under the words Approved by. An illegible name is stamped under the words Submitted by.

2732

Defendant's Exhibit (DP) No. 82 5809

January 26, 1916.

Mr. P. S. du Pont—Copy to Mr. R. R. M. Carpenter.

FUTURE USES FOR OUR SMOKELESS POWDER AND GUNCOTTON PLANTS.

Referring to attached report from Development Department dated January 19, 1916, in regard to future use for Hopewell Plant:

At meeting of the Executive Committee January 24th, careful consideration was given to the question of finding new uses for our Smokeless Powder and Guncotton Plants, and it was moved and unanimously carried that recommendations 1 and 2 in the attached report from the Development Department, revised to include all Smokeless Powder and Guncotton Plants, be approved, to-wit:

(1) In order to intelligently pursue the chemical side of this study the services of an industrial chemist of broad experience should be obtained and eliminate quickly unfruitful work and assist in the study of chemical industries economically possible at our various guncotton and smokeless powder plants.

(2) We would urge that this study be brought to the attention of all the Heads of the Departments of the Company so that suggestions may be carefully considered and followed through in this study.

Referring to the Development Department's third recommendation, to-wit:

(3) We would further suggest that the proper officials of the United States Government be sounded as to the desirability of maintaining this plant in whole or in part for smokeless powder after the war."

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it was moved and unanimously carried that the President be advised that it is the feeling of the members of the Executive Committee that the United States Government should be advised that we have at different points plants which were built or materially enlarged in order to fill abnormal orders; that after the European War is over and these orders have been filled said plants may be put to other uses, and we are now actively prosecuting a study to ascertain what purposes they can best be put to; that if the United States Government is interested in having these plants or any part thereof maintained as explosives plants, we of course, are willing to negotiate with the Government at any time, provided our negotiations for other disposition of such plants have not progressed to a point where it would be impossible to do so.

It was further moved and unanimously carried that the Development Department be requested to prepare an appropriation to cover the cost of properly studying the matter of future uses for our Smokeless Powder and Guncotton plants, it being the feeling of the Executive Committee that this subject is one which will warrant the creation in the Development Department of a special Division to give its whole time and attention to this subject, and that a progress report be submitted to this Committee every two weeks.

25 Sec'y Executive Committee.

NOTE: *W. S. C. Jr.* is stamped in the right hand corner. A handwritten check appears after the name Carpenter. Noted CU is stamped in the right hand margin.

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Defendant's Exhibit (DP) No. 83 5811

SERIAL No. S-657.
FEBRUARY 1st, 1917.

EXECUTIVE COMMITTEE,
Building.

Gentlemen:—

EXCESS PLANT UTILIZATION AND NEW INDUSTRIES.

In view of the discussion and the tentative resolution offered by Mr. Raskob relative to report SU-118 Executive Committee No. 7836 held over from last Monday's meeting, I would like briefly to supplement the discussion.

I fully appreciate the fact that the Committee should be in possession of every bit of information possible before committing itself on such important subjects, and while I feel that full data have been placed from time to time in the hands of the Committee, I also feel that we have been to blame for flooding the Committee with too many progress reports, and that it would have been better to have supplied full report at the time we were prepared to make recommendation.

It has been suggested at various times that we should collect full data on the different subjects and later select those most attractive to us. This is really what has been done during the past eighteen months. The reports of May 15 (U-106) and May 31 (U-107) were the result of the rejection of a multitude of suggestions. These reports outlined a scheme of industrial development which then ap-

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peared to offer the best means for future progress. The investigations which resulted in the various reports subsequent to these dates have confirmed our belief in the system proposed, but the Executive Committee hardly could be expected, in view of the large number of reports, to keep in mind the details of the development planned, and I feel now that it would have been better to have held all this data or at least the Committee should

have been allowed to retain the past reports awaiting the final one. The idea of the reposts, however, was to present a gradual unfolding and checking of the general plan and in these various reports are answered nearly all of the questions recently asked on various matters, and particularly in connection with the proposed purchase of Fels & Company.

The Department, after practically eighteen months of study, has reached the point where certain industries seem best suited for our purposes (Reports SU-116 and SU-118), in that they appear best to combine the specifications of being suitable for our organization, promising from an investment standpoint, and by virtue of their possibilities in the expansion of a large tonnage business, as useful in plant utilization as we can expect.

Having reached this point we must decide whether we agree with the recommendations to adopt these industries for the utilization of plants and excess capital, as no movement from now on satisfactorily can be made without such decision. Certain purchases in order to secure processes and information, or good trade foundations, must be made, and detailed plans laid down for the most economical loca-

tion of allied industries in their proper areas. Also to a certain extent, the personnel of the Department depends on this question.

I attach herewith a chart (arranged in harmony with the graphical charts of report SU-116) with topical index, which endeavors to show more clearly and in more detail, than report SU-118, the financial forecast therein given. Some modifications and rearrangements have been made.

Details of information may be secured by referring in the chart and the index, to the index number given in the first column of figures in the chart and the first column in the topic index where report and page number will be found relating to the topics given on the heading.

It must be understood that the chart really represents

but the beginning of a development which easily may require a generation for the expansion which seems entirely possible for the industries selected.

If the amount given in column "Utilization of plant investment" seems small at the beginning as compared with the total cost of the war expansion, it must be remembered that this will steadily increase as expansion proceeds. As an instance, the utilization at Hopewell, of cotton purification plant is arbitrarily fixed at $300,000. This is the equivalent of thirty-five tons daily of paper stock utilizing only six to eight digesters or about 12,000 tons per annum. It is possible that this might grow to nearer 100,000 tons per annum, with a corresponding increase in plant utilization. As these industries grow the utilization of the primary facilities of land, tracks, water supply,

power and housing must steadily increase. Detailed investigation of the possibilities of building and equipment utilizaton up to this time has not seemed warranted in the determination of industries suitable for our needs.

I therefore recommend the adoption of the following resolution:—

WHEREAS, the Development Department has, during the past eighteen months, been engaged in the matter of finding industries allied and otherwise to our organization which will be capable of utilizing our military powder plants after the war, and

WHEREAS, this study develops the fact that there are no industries which will likely use much more than 25% to 30% of the value (cost) of these plants, and

WHEREAS, it has been developed that there are industries which can utilize much more extensively our organization, and at the same time offer good returns;

RESOLVED, that it is the sense of the Executive Committee, and that the Development Department be advised as follows:—

That from the studies made and reported in detail to this

Committee, the Executive Committee are of the opinion that the energies of the Development Department should therefore be in the direction of employing our organization to the full and that their efforts be confined, especially as

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to future action, to the development of the following industries:—

1—Dyestuff and allied organic chemicals

2—Vegetable oil industry

3—Paint and Varnish

4—Water Soluble Chemicals

5—Industries related to Cellulose and Cotton purification.

Very truly yours,

R. R. M. CARPENTER (Stamp)
VICE PRESIDENT.

NOTE. In upper right hand corner of first page appears stamp: "Noted, W. S. C. Jr."

M.

SPECIAL TOPIC INDEX.

INDEX NO.	S U B J E C T	REPORT	IMPORTS	CONSUMPTION	CONSUMPTION	STATISTICS	ENGINEERING CONSTRUCTION	REFINERS & CRUSHERS	PLANT EQUIPMENT	PROFITS	SPECIAL
	VEGETABLE OILS	U-106					7				
		U-107						2			
		SU-101	24	6,17		1,	12				
		SU-116									3
1	Castor	SU-116	16	22	2		3				
		SU-101	16	17	8	21					
		SU-103	21	5	5	1	7	8	15	16	
2	Corn	SU-101					8				
3	Cottonseed	SU-101	16,18	7,17	7	7		27	29	10,30	
		SU-116			3						
4	Linseed	SU-101	16,18	6,17		21					
		SU-116			2						
5	Linoleum	SU-116					4				
6	Mfr. Soap & Fatty Acids	SU-118							3		
7	Mfr. Food Products	SU-118							3		
		SU-101									9,12
		SU-116					4				
8	Oilcloth	SU-116					4				
9	Oil Expres. Plt.	SU-118							3		
		SU-101							29	30	
10	Soaps	SU-116					4				
11	Baker Castor O. Co.	SU-103		10					14	13,16	
12	Fels & Co.	SU-112		8	2,4 1,17	4	1		14	13	
		SU-119					4		1,3	3	
13	Fatty Acids	U-111					2				
14											
	PAINTS & VARNISHES										
15	Harrison Bros.	SU-111		2	1	8	3,12		18	17,22	
16	Kumaron	SU-106		3	7	11	12	12	16	17	
17	Paint & Varnish Fac.	SU-118							5	5	
18	Pigments	U-107					7,9				
		SU-118	16	16	8	2	6	6,10			
		SU-116					5	4,7			
19	Parlin Paint & Varnish Branch	SU-116						9			
		SU-106				3	5	2,5			

INDEX NO.	S U B J E C T	REPORT	IMPORTS	CONSUMPTION	COMPETITION	RAW MATERIALS	BUSINESS FOR ETTERING	PLANT UTILIZATION	INVESTMENT	PROFITS	GENERAL
20	Hopewell Paint & Varnish Branch	SU-118									7
	ORGANIC CHEMICALS	SU-107	21	15,21	12,21	2	18	8		13	
		SU-116					5				
21	Levenstein Ltd.	S-644			3		4		3	3	
22	Manufacture	SU-118							3		
		U-109	5			6		6			
23	Pan Chem. Co.	SU-114			3,10		19		7,15	8,16	
24	Pharmaceutical	SU-118							4		
		SU-107	5	1,15	8,11	17	18				
25	Salicylic Acid (Del. Acid Wks.)	SU-108	21	15,21	21	2			5	7	
26	Selected Dyes	SU-104	6,14		9		10				
		U-109									1
		SU-116					6				
		SU-118	4						4	4	
		U-102									2
27	Indigo	SU-118							4	4	
		U-105		1							
		SU-104	5				8				
28	Sulphur Blk.	SU-104	5				8				
		SU-105		1							
29	Organic Chem. Concern	SU-115			5	6	7	7	5,10	11	
30	Tartar CH. Co.	SU-114			2,9	10	12,13	13			
31	Water Soluble	SU-109	21	4	4	2	10	9		8	
	INORGANIC CHEMS.	U-107					6,9	6			
		SU-113	16	16		5		10			
32	Chlorine	SU-105		2			3		5	5	
		U-109					10				
		SU-118							4		
33	Water Soluble	SU-110	15	9,15	5,15	2	11	11			
		SU-116					5				
34											
35											

INDEX NO.	SUBJECT	REPORT	IMPORTS	CONSUMPTION	COMPETITION	RAW MATERIALS	PACKING FACILITIES FOR EXPORTS	PRODUCTION PLANT	INVESTMENT	PROFITS	GENERAL
36	Power	SU-118							4		
37	Tin Cans	SU-118							5		
38											
39											
40											
41	ARTIFICIAL SILK	SU-116					6	6			
		SU-118							6	6	
		SU-117	11,35	11,38	8,16	17	17	17	38	38	
		U-104								9	
42											
43	COTTON CLOTH	S-59		30	10,27	15	23	12	38	22	
		SU-116								32	
		U-104						2	8	7	2
44	SHORT FIBRE FOR PAPER STOCK	U-107					2				
		U-103				3					2
		U-100									1
45											

Note:

Page 5819 is on card 56.

Defendant's Exhibit (DP) No. 84

5820

COPY

R I du Pont de Nemours & Co.

ADVICE OF ACTION

February 6, 1917.

Mr. R. R. M. Carpenter

Subject UTILIZATION OF EXCESS PLANT CAPACITY INVESTMENT IN NEW INDUSTRIES:

Action Taken by Executive Committee

At Meeting February 5, 1917.

REMARKS

Referring to your reports of January 26, 1917 (#7836) and February 1, 1917 (#7873) on the above subject.

The following resolution was offered and unanimously adopted:

WHEREAS, the Development Department has been studying the problem of utilizing our military powder plants after the war; and

WHEREAS, this study develops the fact that there are no industries which will likely utilize more than 25% of the value (cost) of these plants; and

WHEREAS, it has been developed that there are industries which can utilize much more extensively our organization and at the same time offer good returns.

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RESOLVED, that it is the sense of the Executive Committee, and that the Development Department be advised as follows:—

That from studies made and reported in detail to this Committee, the Executive Committee are of the opinion that the energies of the Development Department should therefore be in the direction of employing our organization to the full and that their efforts be confined, especially as to future action, to the development of the following industries:—

1. Dyestuff and allied organic chemicals.
2. Vegetable oil Industry;
3. Paint and Varnish;
4. Water soluble chemicals;
5. Industries related to cellulose, and cotton purification.

(S) M. D. FISHER
Sec'y Executive Committee

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3545

Defendant's Exhibit (DP) No. 85

5822

Serial No. S-571
December 29, 1915.

EXECUTIVE COMMITTEE,
Building.

Gentlemen:

DYESTUFFS

I have asked the Chairman to call this special meeting in order to discuss a policy to be adopted in reference to our entering the dye industry along the lines as suggested by Mr. M. H. Poucher, the head of the American Badische Company.

Mr. Poucher came to us about two weeks ago and stated that the American Textile Industry was in a very serious condition, due to the lack of dyes which had previously come in from Germany. He said that it was absolutely necessary, in order to prevent the complete shut-down of the Textile Industry, for someone to take steps to produce intermediates in order that the United States might secure a supply of dye from Europe.

There are three or four large dye plants in England that are willing to produce their full capacity of dyes if the United States can supply the intermediates, they to keep one-half of the dye produced for English consumption and to ship one-half to the United States, this arrangement to be made through Lord Moulton, who has full charge of the subject to England under the Government.

Mr. Poucher's suggestion to us was that the du Pont Company should immediately enter into the production of intermediates as far as they were able, these intermediates to be sold to a company to be organized by Mr. Poucher, in which we could subscribe up to 50%, Mr. Poucher's company to ship the intermediates to England under a contract

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to be arranged between Mr. Poucher's company and the English companies, the English companies to return 50% of their output of dyes to Mr. Poucher's company, who

would, in turn, sell to the Textile Industries under contracts to be arranged, the Powder Company to secure their profits through their 50% interest in Mr. Poucher's company, as well as from a profit on the sale of the intermediates. It is stated by Mr. Poucher that in this way the Dye Industry in this country, especially as far as the intermediates are concerned, could get a good start and by the time the war is over would be in a position to be independent of Europe. He states that it is not a question of an endless variety or a complete assortment of dyes, but rather a wise selection of possible and profitable articles.

The matter is so critical with the textile people that Mr. Poucher requests from us an immediate answer as to our position and has asked for a meeting with the textile people in Boston early next week. He states that there is in England today a quantity of about two hundred tons of dyestuffs which they would release to the United States if we could assure them in the near future of a supply of intermediates to make up this quantity for their own consumption. Several discussions have been had on this subject and I attach a memorandum of meeting held this morning between Mr. C. A. Meade, W. C. Spruance, Dr. Reese, and the writer.

There appears to me reasons both for and against our going into this proposition. I thoroughly concur in the opinion of the meeting held this morning that we should not go into a company with Mr. Poucher for the trade of intermediates and dyestuffs with England, but if we go in

at all all to stop at the production of intermediates and leave the balance of the work to him.

The most serious part of it, from our standpoint, is that we have no plants at the present time available for the production of intermediates, nor have we any crude oils for the production of intermediates. We have either contracted or offered material which will occupy all of our plant up to the end of 1916 and considerably more raw material than we are covered for for the production of trivelene and trinitretoluol. There is a great scarcity of crude material in the country and every gallon that has appeared we have imme-

diately taken for our own requirements.

There is only one policy I can see that we could adopt and that would be a policy to stop the manufacture of explosives, using these materials at our present contracts plus what we have offered. Even with this is would mean that we would have to build a complete new plant at a cost of, in the estimation of the Operating Department, some hundred thousand dollars, and develop an entirely new supply of crude material.

As Mr. Poucher is talking about supplying intermediates to Germany within the next couple of months, it looks like a hopeless task for us. It is impossible, due to our inexperience, and also due to the fact that we have no idea what we would have to pay for oils, to estimate what the profits from the production of these intermediates would be.

The only advantage of our getting into this situation at this time would be that we would probably have a start on anyone else who should take it up after the war, but this is somewhat offset by the fact that we are compelled to build entirely new plants for this production and would have a

tremendous excess capacity on our hands after the war. Again, in case the textile industries of the country are compelled to shut down, due to lack of dye materials, public opinion may severely criticise the explosive industries who have corralled the crude materials for shipment of explosives to Europe rather than allowing them to be utilized for the production of dyestuffs.

One point brought out by Mr. P. S. du Pont is that if we inform Mr. Poucher that we are not prepared to go ahead with the proposition he is very likely to get someone else to go in with him and in an endeavor to buy raw materials take a considerable amount out of the market and thereby increase the cost to us.

My personal feeling is that we should notify Mr. Poucher that we are not prepared to take advantage of his proposition for the following reasons:

First: That as all of our plant capacity is fully

occupied we would have to build a complete new plant for the production of intermediates.

Second: Due to the scarcity of crude material.

Third: Due to the time of our technical men being fully occupied.

I might say that Mr. P. S. du Pont does not altogether agree with this step, owing to the fact stated above that Mr. Poucher with someone else will, no doubt, enter the market for the purchase of crude materials. He believes it would be better to state to Mr. Poucher that we will agree to enter into the production of intermediates if we can secure crude material over and above what is needed to fill our orders for explosives, or that after our present

orders and offers are taken care of we will utilize one-half of additional crude materials we can secure for the production of intermediates.

I think this is a question of Company policy for the Executive Committee to decide, that is, whether we shall forego sure present profits on all of the crude material we could possibly buy for a problematic profit on the production of intermediates in which we are, up to the present time, inexperienced.

Yours very truly,

W. S. CARPENTER,
Director, Development Department

NOTE: In the upper right hand corner of first page is stamped Noted RRMC. The name W. S. Carpenter is stamped at the end of the letter.

Defendant's Exhibit (DP) No. 86

I. DU PONT DE NEMOURS POWDER CO.

5827

ADVICE OF ACTION

December 30, 1915.

MR. R. R.M.CARPENTER:

SUBJECT DYE STUFFS.

ACTION TAKEN BY Executive Committee

AT MEETING December 29,1915.

REMARKS

RESOLVED, that the Development Department be advised that the Executive Committee feels that due to the raw material situation and the lack of information on which to base any definite action we are not prepared to commit ourselves at this time to go into the manufacture of intermediates for the production of chemical dyes, but that the Development Department be requested to keep closely in touch with this matter with a view to securing final decision of the Executive Committee later.

M. D. Fisher

23 Sec'y. Executive Committee.

NOTE: "Ex Com. Binder C U 4, 228-D" is written in the upper right hand corner. "Noted WSC Jr., Noted GAW," and "R.M.C.," and "Noted CU" are stamped in the upper right hand corner of the document. "2 & 1 pink" with a line through it appears above the letterhead of the E. I. du Pont de Nemours Powder Co.

3551

Defendant's Exhibit (DP) No. 87 5428

D

To Executive Committee Serial No. U-106.

From Development Department May 15, 1916.

TENTATIVE REPORT ON GENERAL UTILIZATION OF PARLIN, CARNEY'S POINT AND HASKELL PLANTS.

This report is submitted from the standpoint that the above three plants can best be discussed together, while the other new or greatly enlarged plants should be considered separately.

Parlin, Carney's Point and Haskell have similar characteristics as to construction, location and management, so that one report covering the three plants enables a clearer discussion. The fundamental idea has been that of selecting certain new industries logical to each plant, which together with some assured existing business will enable economical operations. Another basic reasoning is that these new lines should not necessarily utilize at the start the whole of the excess plant capacities, preferably engage in the new manufacture on a modest scale at first, but capable of large, logical development.

Repauno:

It is assumed that this plant is assured of a large commercial business and the proportion of excess capacity is relatively small. A suitable development of the other plants requiring acids, aniline and similar raw materials for other industries will offer sufficient utilization of Repauno.

DEEP WATER POINT:

For several reasons which will be developed in a separate report this plant is held to be the logical one for an organic industry and plans under preparation will show ample utilization of the plant in a more economical manner than by any of the industries discussed in this report.

HOPEWELL:

On account of its location, size and construction this plant can best be considered by itself, and probably especially because there is at present no assured commercial business, with which new lines of manufacture must harmonize. Several special studies and special reports will therefore probably discuss this plant.

Hopewell has been proposed for manufacture of Pyraline. We can see no reason for this that does not equally apply to, for instance, Haskell. Further Haskell could utilize a proportionately greater part of its equipment (mixers, alcohol storage, refrigerating machinery, hydraulic presses,) not available at Hopewell, and the proximity to Arlington would give more economical management.

Hopewell has been proposed for manufacture of Fabrikoid. Exactly the same line of reasoning applies in this case. Hopewell is not logical for such industries and will receive separate attention.

PARLIN:

It is considered that the manufacture of varnish would be a logical new line for Parlin and one which should prove profitable.

Varnish is used very extensively all over the country for a great variety of purposes and in many ways similar to the uses for pyroxylin solutions now manufactured at Parlin. Of the uses may be mentioned; the protective covering of toys, cardboard, leather goods of all kinds, furniture, picture frames, interior decorations, finishing of floors of all kinds, book binding, etc. Varnish of different kinds is used in large quantities by manufacturers of furniture, leather goods, etc., while there is similarly a large consumption of varnish by numerous consumers each requiring relatively small amounts. Varnish is handled by every paint store and used by every painter in the country. It is unnecessary for the purpose of this report to investigate the actual consumption

Uses for Varnish

in this country of varnish which is well known to be of very great proportions or its manner of distribution which is well known to be both in the form of wholesale purchases from the manufacturers and an extensive small package business.

Varnishes may be divided into two classes, i.e. spirit varnishes and oil varnishes. The purpose of varnish in either case is to leave on the goods to be covered a hard and smooth protective surface which is water-proof and which sometimes should be colorless and transparent but in other cases colored: The principal constituents are always one or more gums and a solvent which, in the case of oil varnishes, is composed of one or more vegetable oils, but in the case of the spirit varnishes is principally grain alcohol. The raw materials required are quite numerous and the principal ones are the following:

Raw Materials Required.

Grain Alcohol	Amber	Linseed Oil
Wood Alcohol	Capal	Castor Oil
Benzol	Rosin	Rosin Oil
Solvent Naptha	Dammar	Copal Oil
Turpentine	Shellac	and other oils.
Rosin Spirit	Sardarac	
	Mastic	
	and other gums.	

To a small extent pigments are used similar to those used in paints and dyestuffs similar to those used in the manufacture of pyralin and pyroxylin solutions.

Methods of Manufacture.

The manufacture of spirit varnish is relatively simple, consisting essentially in mixing together the solvents, such as alcohol, with gums, such as shellac, in suitable proportions. In the case of manufacture on a large scale this should also include to some extent rectification of solvents as well as refining and purification of some of the gums. This manufacture is very similar to that of the manufacture of pyroxylin solutions from solvents and pyroxylin.

The manufacture of oil varnishes is similar to the spirit varnish and pyroxylin solution manufacture but involves relatively more manipulation and more equipment.

The equipment required for varnish making is relatively simple. It is not expected that any of the present powder

manufacturing machinery could be utilized to any great extent in the manufacture of varnish but portions of the general equipment, such as boiler plant, power plant, store houses, and storage tanks, grounds and buildings, as well as roads and railroad sidings could be utilized and the additional equipment required is not expensive.

The varnish making business is a large one with probably an increasing consumption due to a growing population and progressively high standard of living, which tends to increase the size of dwellings, increase in production of furniture and articles of both comfort and luxury, all of which must use varnish. It does not appear that any substitutes for the varnishes here discussed is possible. The pyroxylin varnishes and lacquers are more expensive to manufacture and are for many purposes much less suitable so that these need hardly be considered. Varnish making is a large business which is certain to be profitable if carried out under suitable conditions and should not require greater skill than can be obtained through our own developments aided by the services of a few practical men engaged from the trade. General View-Point.

The subject of varnish manufacture and sales has been discussed personally with some members of the Smokeless Powder Operating Department and Sales Department and no objections have been made nor any special difficulties mentioned, it being apparent that the proposition of varnish manufacture and sales appeared satisfactory.

From the consumers standpoint and therefore from a sales standpoint, paint and varnishes go together and paint and varnish manufacture are therefore frequently combined. The combination of these two kinds of manufacture is also to an extent logical from a manufacturing standpoint. We are not at this time submitting any proposition in respect to paint manufacture, but attentionis called to the probability that paint manufacture should be kept in mind and may be proposed at a later date as a further extension of the manufacturing industries.

Special Reasons for our Company Engaging in the Manufacture of Varnish and Locating such Manufacture at Parlin Plant.

I. A certain proportion of excess plant capacity at the termination of the excess powder manufacture at the Parlin Plant may be utilized, such as a portion of the boiler plant, power plant, storage tanks, railroad sidings and roads, buildings and general facilities.

II. Owing to the similarity in manufacture and uses of varnishes and pyroxylin solutions the present force at the plant should relatively quickly become experts in varnish making and the combination would give great manufacturing advantages inasmuch as to a large extent a considerable proportion of the plant equipment and raw materials could be used for the manufacture of both pyroxylin solutions and varnishes, which would give a more economical utilization of the investment as compared with concerns manufacturing only one of the products.

III. Inasmuch as to a large extent varnishes are used for the same or quite similar purposes as pyroxylin solutions, varnish manufacture would give the Company a more complete business which would make it easier to meet trade conditions. The present sales organization could undoubtedly handle the varnishes to a large extent by the same salesmen and force in general as in the case of pyroxylin solutions and thereby reducing the selling expenses for both. To some extent pyroxylin solutions and lacquers compete with varnishes and our own varnish manufacture would place our salesmen in a position to supply products to the best advantage of the customer which would give our Company a stronger position with the trade.

IV. To a considerable extent the raw materials are the same in the manufacture of our present pyroxylin solutions

and pyroxylin lacquers as compared with the varnishes, and in this connection our Company would have a stronger position than at least some other varnish makers. It is, for instance, understood that our Company is able to purchase its grain alcohol materially cheaper than it is possible for any other concern in this country and this would give us a decided advantage, in the

manufacture of spirit varnishes. It stands to reason that with respect to other raw materials our Company should be able to obtain these as cheaply on an average as other concerns. Further, a particular advantage of our Company is that we would probably be in a position sooner or later to enter into the manufacture of raw materials, and thus in part reducing the cost to a greater extent than possible for the average varnish manufacturer. In this connection it is mentioned that a study is being made of our Company engaging in the oil production and oil refining of vegetable oils for several purposes such as, for instance, linseed oil for varnishes, etc. Another possibility would be that of undertaking the production of rosin and turpentine in conjunction with operations of the Georgetown alcohol plant by a suitable addition to this plant operated by the same management. Although the manufacture of varnish is proposed without being dependent in any way on projects such as this, they are mentioned as an indication of possible further development.

V. Engaging in the manufacture of varnishes will give an opening to the manufacture of paints which is a very large business and which could suitably be located at the Parlin Plant. This indicates the desirability of paint manu-

facture from a standpoint of further extension although it is a relatively less allied business than that of varnish making.

General Scheme of Utilization of Parlin.

I. Parlin is assured of a large and profitable business in its manufacture of pyroxylin solutions, solvents, commercial ether, etc.

II. The proposed spirit and oil varnish making will add considerable to the business, being capable of development into a volume as great or greater than pyroxylin solutions.

III. A future development into the large industry of paint manufacture is possible.

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CARNEY'S POINT:

Vegetable oil production and refining with allied industries is proposed for Carney's Point.

Reasons for Engaging in Vegetable Oil Manufacture.

I. Vegetable oil production and refining is a large and growing business. It is a growing business on account of increasing population and an even more rapidly increasing consumption of linoleum, oil cloth, artificial leather, varnishes, paints, soap, etc. for which oils are used. To a large extent oil manufacture is not connected with other industries and must therefore be capable of being lucrative by itself.

II. An oil plant would not utilize powder making machinery, but portions of plant could be utilized as follows:

Ground, railroad and wharf facilities,
Offices, chemical laboratory and storehouses
Steam boiler plant and power plant
Probably some hydraulic press equipment

III. Castor oil is consumed in considerable and increasing quantity for Fabrikoid and it would be advantageous and no doubt profitable to become independent of middlemen. Castor oil should be produced in such quantity as to cover more than the Fabrikoid demand.

IV. Castor oil is used for a variety of purposes, such as for instance for Turkey Red oil (made from castor oil and sulphuric acid) used in large quantities in cotton printing and dyeing, (for instance, Eddystone Print Works). The manufacture of Turkey Red Oil and other uses of Castor Oil could be developed.

V. Varnish manufacture has been recommended for Parlin. This would require among other oils, especially linseed oil. This linseed oil business could be increased by going into paint manufacture at Parlin.

VI. Manufacture of linseed oil would facilitate our engaging in the manufacture of oil cloth and linoleum.

VII. Production of fatty oils of various kinds would form a suitable starting point for soap, soapstock and glycerin production, by utilizing the lower grades of oils for these purposes.

Reasons for Selecting Carney's Point.

It is almost necessary that the plant should be located on tide water and within easy reach by ocean going steamers, inasmuch as the raw materials would largely have to be imported from such countries as India, Philippine Islands, Oceania, Africa, etc. Hopewell is not suitably located and Repaupo is assured of sufficient commercial business. Deep Water Point could be considered, but other plans are being prepared for this plant.

General Scheme of Itilization of Carney's Point.

I. Carney's Point has a certain amount of commercial manufacture assured, such as bulk shot gun powder and commercial rifle powder and it would probably be found advantageous to operate the cotton purification plant.

II. It is assumed that some cannon powder orders will be obtained an ! that it will be the main reserve smokeless powder plant.

III. Vegetable oil production and refining would add considerable permanent commercial business as explained above.

IV. Carney's Point should be considered as the future location of a soap, fatty acid and glycerin plant to be studied later.

HASKELL:

A preliminary study of the utilization after the War of the Haskell Plant has led to the conclusion that this plant should be considered primarily for commercial nitrocellulose industries. This conclusion has been reached to a great extent by a process of elimination.

Fabrikoid.

It appears that Haskell is as well situated for Fabrikoid manufacture as any other plant of the Company's. There is little to choose with respect to cost of nitrocelluiose. Parlin has the advantage of saving freight and handling of a portion of the solvent (ethylacetate), but this is not a large item and Haskell has cheaper fuel. Further, Parlin has an assured and considerable commercial business already and another line of expansion has been recommended. We are

also more favorably impressed with the local

conditions at Haskell. It is our understanding that the Operating Department prefe.s Haskell as the proper location for the new Fabrikoid Plant, whenever wanted, and this fits in with our plans.

To some extent the above statements apply to this subject. Ethylacetate is not used, so that Parlin has no advantage in this respect over Haskell. Haskell has the great advantage over the other plants of a purer water, which is of some importance and the proximity to Arlington should also be in its favor. We understand that the Arlington plant cannot expand much more and that the Operating Department of our Company would favor a new plant at Haskell, whenever wanted. This would fit in entirely with our plans. Pyralin

We cannot see any special reason at this time for entering on the viscose process. Our interest in the subject is only in case—in a measure against expectation—the pyroxylin proces should prove attractive. Artificial Silk.

The Chardonnet, Nobel and other pyroxylin artificial silk processes were investigated very thoroughly some years ago, especially during 1909 and 1910. The Executive Committee of this Company decided against engaging in this industry at the time for very good reasons.

The strongest reason was probably that the then new viscose process was developing rapidly and it was expected almost with certainty that it would take the place of the pyroxylin process. However, the case does not at all appear definitely against the pyroxylin process.

Reasons for Greater Profit Under Present Conditions.

I. In 1910 the Chardonnet Company demanded cash payments for rights of $135,000 and a plant was figured for a capacity of 400,000 lbs. of silk per annum and a capitalization of $800,000. At 20% return on the investment this is equivalent to 7¢ per pound silk. Unquestionably the cash payment could be reduced to a relatively small amount now on account of the competition of viscose silk.

II. The excess plant capacity was not a great factor in 1910, but is now very important, and pyroxylin manufacture for silk would be closely related to such manufacture as Fabrikoid and Pyralin. Furthermore we have now an excess capacity of ether manufacture and ether is next to pyroxylin the most important rawmaterial. Pyroxylin, alcohol and ether constitute at least 80% of the total raw materials.

III. Great advancements have been made by our Company since 1910 in manufacture of nitrocellulose, solvent recovery, etc.

1V. The necessary plant investment would be much smaller than in 1910. Not only is there now available an ample nitrocellulose and ether plant, but also boiler plant, power plant, offices, laboratory, dwellings, hospital as well as hydraulic presses, which could be utilized for filtration of the solution and refrigerating machinery for solvent recovery. The old estimate was $428,460 actual investment.

Reasons Why the Viscose Process May not be Superior to the Pyroxylin Process.

Unquestionably the raw materials are much cheaper for viscose and only some special conditions might make it possible for the Chardonnet process to compete successfully. It is quite probable that without disadvantages the viscose silk can be manufactured at a cost of about 20 to 25 cents per pound less than for pyroxylin silk.

I. It appears that for the same weight and thickness of goods the pyroxylin silk has 40% greater length. The merchant buys the silk by the pound and at least for some purposes sells it by the yard, giving a possible 10% price advantage of pyroxylin silk, if properly handled. The minimum price for artificial silk (wholesale) is probably $1.20 per pound, or a possible 12 cent advantage for pyroxylin. The price has always been much higher.

II. Seconds do not seem to appear on the market of pyroxylin silk, it being of very uniform quality. On the other hand, relatively large quantities are sold of both second and

third quality of viscose silk, at greatly reduced price. Assuming for the sake of argument, 30% seconds and thirds at an average price concession of 50¢ (say $1.25 instead of $1.75), this is equivalent to 15¢ per lb. of total product

These two factors might balance any difference in cost of production.

It seems probable that assistance and rights could be obtained readily and relatively cheaply and the manufacture would be well suited to the Haskell Plant. This plant would have better climatic conditions (less humidity) and purer water than Carney's Point and probably good labor conditions for girls and boys, being not far from Paterson, N. J., the seat of the silk industry in this country.

RECOMMENDATIONS:

It is recommended that this Company should engage in the manufacture of varnishes of the several varieties and a Parlin.

locate this manufacture at the Parlin Plant. This manufacture should be commenced on a relatively small scale and enlarged as warranted by developments. It is in this connection suggested that spirit varnishes could undoubtedly be manufactured with relatively little preparation and after relatively little study. It is also recommended that the Sales Department should obtain information on the subject and prepare for possible sales through its present customers.

It is further recommended that the best plan would be to engage the services of one or more persons of practical knowledge and engage at an early date in this business as the best means of obtaining information. In the case of a business of this nature a special study of plant investment and trade estimates appear unnecessary.

b. Carney's Point.

It seems advisable for our Company to engage in the manufacture of vegetable oils such as castor oil, linseed oils and also some other vegetable oils in order to cover the demand of

such oils for Fabrikoid, varnishes and future possible extensions into paints, oilcloth and linoleum, as well as possible manufacture of Turkey Red oil and other commercial uses for oils. It is considered that this would give the best starting point for a future soap manufacture. Carney's Point is proposed as the suitable location for this industry.

A commercial study should therefore be made of this subject and results submitted as early as practicable.

c. Haskell.

It is recommended that the Arlington Company and the Operating Department should be advised that it would

suit our plans if a new Pyralin plant, whenever wanted, should be located at Haskell.

Similarly the Operating Department should be advised that it would suit our plans to have a new Fabrikoid plant, whenever wanted, located at Haskell.

We also recommend that a study should again be made of artificial silk from pyroxylin with a view to locating such plant at Haskell if estimated to be profitable.

PREPARED BY:

FIN. SPARRE (Stamp)

APPROVED BY:

R. R. M. CARPENTER (Stamp)

NOTE. "Noted W. S. C. Jr." stamped at top of first page.

Defendant's Exhibit (DP) No. 88

November 23rd, 1917.

COMPLETED RECOMMENDATIONS OF EXCESS PLANT UTILIZATION DIVISION.

During May 1916 two reports were submitted, outlining in a general way the new chemical industries proposed for a complete system of plant utilization. Further study of these plans was continued and in December 1916 a report was submitted giving a specific outline of the proposed new industries.

This plan has been consistently followed and the following industries, grouped under five heads, have been recommended and are in commercial operation.

DYESTUFF AND ALLIED ORGANIC INDUSTRIES:

An electrolytic chlorine and caustic soda plant has been erected at Deep Water Point. With this plant as a basis, the manufacture of chlor benzol, benzoic acid, benzaldehyde and phosphoric trichloride and chlor acetic acid have been added.

The general dyestuff group has been transferred to an operating department so that these may be considered in operation relative to the Excess Plant Utilization Division.

A salicylic acid plant has been acquired and put into operation, through the purchase of the Delaware Acid Works.

WATER SOLUBLE CHEMICALS, ACIDS, ETC.:

A cream of tartar plant has been established at Hopewell, through the purchase of the Pan Chemical Company.

Although an appropriation request for a tartaric acid plant has been prepared by the Engineering Department at our request, and appropriation obtained for a portion of the equipment, we have not proceeded with this industry on account of the difficulty in obtaining raw material, which is produced only in

Europe. This manufacture is ready for completion whenever this situation becomes normal.

Bichromate of soda manufacture has been added through the acquisition of Cawley, Clark & Company.

Acetic acid, lactic acid, lead acetate, alum, alumina hydrate, sodium nitrite, strontium nitrate are new products added through acquisition of Harrison Bros. & Co. Inc. Additional capacity for sulphuric acid, nitric and hydrochloric acids and sodium acetate were also obtained by this purchase.

PAINTS and VARNISHES;
COLORS and PIGMENTS:

These have been added through purchase of Kumaron patents, Harrison Bros. & Co. Inc., Cawley Clark & Company, and Beckton Chemical Company.

The cumaron patents furnished us control of a new base for paints and varnishes. Harrison's furnished a line of mixed paints and these important pigments, white lead, red lead, litharge, blanc fixe and some varnish. Cawley Clark furnished a line of colors and pigments very closely related to Harrison products. Beckton furnished lithopone. The acquisition of the Bridgeport Wood Finishing Company now in process of transfer will add to the mixed paint and varnish lines, but more particularly will establish a line of wood finishes.

INDUSTRIES RELATED TO CELLULOSE and COTTON PURIFICATION:

The purification of linters and hull shavings for cotton pulp for paper has not been found to be a commercial proposition and the subject has been dropped. The study of wood pulp and paper has been substituted.

Of the five groups of industries to which the activities of this division have been confined since February 1917, the paint and varnish group may be considered as complete, if the purchase of Lowe Bros. is consummated.

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In the group of water soluble chemicals and acids, Rochelle salt and Seidlitz mixture manufacture is ready for addition to Hopewell. Appropriation request with Engineering Department plans is ready for signature and report on same to Mr. R. R. M. Carpenter is ready for transmittal.

The manufacture of formic and oxalic acids has been worked out by the Chemical Department, and Engineering Department plans are almost complete.

A report on the vegetable oil group is ready for transmittal.

The subjects covered in this summary are only a portion of those under consideration, and it should not be assumed that the non-mention of the balance is any criterion of the opinion of the Excess Plant Utilization Division as to their comment or technical value. This memorandum is to summarize particularly those manufactures which have been recommended and passed by the Executive Committee, but those mentioned in addition are the subjects which have

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been sufficiently completed by this Division for presentation for official approval.

The attached sheet shows the new products added to date.

NOTE. At top of first page appear pencil notation "Noted WSCJr" and partially legible notation apparently "Copy to progress charts".

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Defendant's Exhibit (DP) No. 89

Serial No. S-673
May 1st, 1917.

EXECUTIVE COMMITTEE,

Building.

Gentlemen:

ACQUISITION OF CAWLEY, CLARK & CO.

I am handing you report on Cawley, Clark & Co. which I would ask you have brought up at the special meeting on Thursday. If we are interested in this matter it is necessary to give them a reply at once as they have written us along the following lines:

> "I do not think it fair to us that the decision about this matter should be unduly delayed as this is the time of year when we generally make certain important arrangements for the future and it is highly important that we know immediately just where we stand."

This letter was written to Mr. Lammot du Pont April 20th and I feel we should give them a prompt reply.

I also quote from their letter on their reason for selling Cawley, Clark & Company.

> "The business is one in which we have the greatest pride and over which we have full control, and were it not that our business and the Beckton Chemical Company's business is mixed up to some extent we should not be inclined to sell out at any price within reason."

Yours very truly,

R. R. M. Carpenter,
Vice President.

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Serial No. S-673
May 1st, 1917.

EXECUTIVE COMMITTEE,

Building.

Gentlemen:

ACQUISITION OF CAWLEY, CLARK & CO.

At your last meeting you requested the Development Department to present to you recommendations and reasons on the subject of the acquisition of Cawley, Clark & Company.

Cawley, Clark & Company, being large color manufacturers, fill in the gap between heavy chemical and dye manufacture and paint manufacture. It has always been the belief of the du Pont Company that it was advisable to manufacture or produce as much of our own raw material, such as nitrate, and other important ingredients, as possible, and on the same argument large paint manufacturers are in a much stronger position if they produce their own colors. For example—Sherwin, Williams & Company, the largest in the country, who always produced their own colors. The du Pont Company and the Harrison Company are in a splendid position to manufacture a great many of the ingredients which Cawley, Clark & Company use and better profits can be secured by the further elaboration of these ingredients than by selling them simply as ingredients. In other words—by elaborating the heavy chemicals which we can manufacture economically, and the colors, we can secure better prices than if we simply sell them on the market.

The whole scheme on which the Development Department

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has been working in this endeavor to invest our excess capital and utilize our plants is to eliminate the middleman's profits by beginning with raw materials and selling ultimate products to the consumer. Cawley, Clark & Company fits right in this proposition admirably.

We feel that the above reason is a sufficient one to give for the acquisition of this company.

Now as regards the profit, and which is, of course, all important, we would give the following figures:

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According to Mr. Lammot du Pont's report of April 20th it is proposed to purchase the Cawley, Clark & Company, for $1,440,000 as of December 1st, 1916, the date of their last paint sheet, and to pay any additional amount for further earnings between that date and June 1st, 1917. As per the report of April 20th the net tangible assets were $1,219,000. The proposed purchase price being $1,440,000 left a good-will item of $221,000 or only 15%.

We call your attention to the earnings for the year ending June 1st, 1916, namely—$546,744. At the present rate of earnings it seems safe to assume that the earnings for the year ending June 1st, 1917 will be at least $400,000. The purchase price being $1,440,000 as of December 1st, 1916, we should add to this the estimated earnings from this date to June 1st, 1917, bringing the total to $1,640,000. There should be deducted from this an amount of $400,000 as excess capital, which is at present in the business as of December 1st, 1916, and which we could take out, reducing this to $1,240,000. There should also be deducted the additional earnings as above of $200,000 which would bring the net investment as of June 1st, 1917 to $1,040,000.

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We see no reason why the earnings for the year ending June 1st, 1918 should be reduced materially below the year ending June 1st, 1917, namely—$400,000. By allowing 10% on the investment of $1,040,000 there would be an amount of $296,000 available to reduce the total investment, leaving an investment as of June 1st, 1918 of $744,000.

If the earnings after June 1st, 1918 were to drop suddenly to $100,000, which Cawley, Clark & Co. believe to be a most conservative estimate of the normal earnings on their present capacity, the return on $744,000 would be 13½%. We do not believe it likely, however, that the earnings for the succeeding three or four years will drop as suddenly as this but that for the years 1918 and 1919 and 1919 and 1920 there will be earnings in excess of $100,000. which will still further reduce the investment ultimately to a very handsome earning basis.

In order to make these figures clearer to you we attach Exhibit "A". In those figures we have not considered additional earnings

which might be brought about by du Pont management. We would have the advantage possibly, of more aggressive selling as well as the Chemical Department finding ways to cut corners and improve costs and develop new processes which a smaller organization would not have. Personally I see no reason why the normal earnings should not be raised from $100,000 to $125,000 or even $150,000.

There is another thing in favor of the purchase of Cawley, Clark & Co. which was not mentioned above, namely—that the business and the plants of this company and the Beckton Chemical Company are so intermeshed that it will be rather difficult to separate them and might lead to some complications, although, of course, not insurmountable.

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The Development Department would recommend the adoption of the following resolution:—

"WHEREAS, Cawley, Clark & Co. are joint owners with Harrisons, Incorporated of the Beckton Chemical. Co.; and

WHEREAS, Harrisons, Incorporated are desirous of purchasing the Cawley, Clark & Co.'s interest in the Beckton Chemical Company; and

WHEREAS, the business and also certain portions of the plants of the Beckton Chemical Co. and Cawley, Clark & Co. are difficult to segregate; and

WHEREAS, the purchase of Cawley, Clark & Co. will round out the plans of this Company to enter into the manufacture of certain heavy chemicals, dyestuffs, and paints at an attractive profit, with the opportunity of increasing this profit through more aggressive management and research;

RESOLVED, That Harrisons, Incorporated be authorized to offer $1,440,000 for one hundred per cent (100%) of the stock of Cawley, Clark & Company, provided:

1st: That the stock will be delivered, approximately, June 1st, 1917, and that the payment will be made on the same date.

2nd: That an additional payment will be made as soon after June 1st, 1917 as an inventory can be taken and the profits ascertained, the amount of this additional payment to be the amount of the net profits of Cawley, Clark & Co. from December 1st, 1916 to June 1st, 1917, less any dividends or distribution of profits made during that time.

3rd: An inventory to be made at cost price and checked by a representative of Harrisons, Incorporated.

4th: Purchaser to have full access to books, records, and plants of Cawley, Clark & Co. for the purpose of

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checking figures and statements presented by the sellers, the purchase to be contingent on the check of these figures to the satisfaction of the buyer."

Yours very truly,

R. R. M. Carpenter,
Vice President.

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NOTE: File 1, pt. 1 is written in the upper right hand corner. Noted W.S.C. Jr. is stamped in the right hand margin. Illegible writing appears in the left hand margin of the 3rd page.

Defendant's Exhibit (DP) No. 90 5[illegible]2

EXTRACT FROM MINUTES OF EXECUTIVE COMMITTEE
MEETING #156—AUG. 31, 1917

E. I. DU PONT DE NEMOURS & COMPANY

* * * * * * * * *

QUESTION OF PURCHASING AN ADDITIONAL PAINT AND VARNISH COMPANY—BRIDGEPORT WOOD FINISHING COMPANY:

In compliance with resolution adopted at meeting of this Committee on August 24, 1917, Mr. Lammot duPont, President of Harrisons, Incorporated, submitted to the Committee the following resolution adopted by the Board of Directors of that Company at meeting August 29, 1917:

RESOLVED, That the Board of Harrisons, Inc. recommend the purchase of the Bridgeport Wood Finishing Company for the sum of $350,000. as recommended in Development Department Report SU-128 with the understanding that it would probably cost an additional $25,000. to install the Bridgeport equipment at the Harrison Plant, this figure of $350,000. being arrived at as follows:

Inventory of Raw and Finished Products, Accounts Receivable, and Machinery at $275,000. less $25,000. estimated cost of installation at Harrison Plant ...	$ 250,000.
Good Will	50,000.
Loan to Mr. Breinig	50,000.
Total	$ 350,000.

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Provided: that on examination of the customers' accounts of the Bridgeport Wood Finishing Company by Mr. Hatt the General Paint Sales Manager of Harrisons, Inc., the Board may be assured that the price of $50,000. for the Good Will is a fair one and that the business can be retained; and provided further that there are no unusual or onerous or unprofitable sales contracts on the books; and provided also that proper arrangements for the rental to Harrisons, Inc. of the Bridgeport Factory can be made until such time as Harrisons, Inc. can arrange to transfer the business to the Harrison Plant.

After discussion, it was moved and unanimously carried that the above action taken by the Board of Directors of Harrisons, Incorporated, be approved.

Defendant's Exhibit (DP) No. 91 5954

COPY

August 18, 1923.

Mr. Irenee duPont,
President.

Referring to attached communication by you to the Finance Committee and to your request that I comment on same, not only with respect to its legal aspect but also as to any business aspect which I care to make:

In compliance therewith will say it would seem for the reasons pointed out by you that the sale by duPont Company of thirty per cent. of its holdings in G.M.C. common stock under the Brown-Raskob plan would be an improvident transaction. It is quite evident that if the dividends and bonus payments (if any) received by the Managers Securities Company are sufficient to enable it to pay its bonds at maturity, this ipso facto demonstrates the improvidence on the part of duPont Company in selling the stock. The unwisdom of this bargain is apparent unless, as will probably be contended, the benefits flowing to duPont Company's remaining investment in G.M.C. common stock from the benefits received by G.M.C. from the existence of the Managers Securities Company balance or outweigh the improvidence apparent in the sale. Whether the carrying out of the M. S. Company's plan will increase the business and prosperity of the G.M.C. over what it would have been if the M. S. Co. did not exist, and to what extent it will increase the prosperity of the G.M.C., is largely a matter of speculation and is a question on which individual judgments may arrive at different conclusions. Personally,

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I am skeptical about these benefits for reasons which, if set forth here, would

unduly prolong this memorandum. In addition to the matters pointed out by you as showing from the standpoint of the duPont Company the improvidence of the sale of thirty per cent. of its holdings in G.M.C. stock, I desire to point out that the plan as proposed would involve an expenditure on the part of duPont Company of $20,000 or $25,000 in stamp taxes incident to original issues of stock and transfers of stock. In addition to this, it is apparent that if this sale is made the duPont Company will be converting stock, the income from which is not subject to Federal income tax, into bonds, the interest upon which is subject to the normal tax of 12-1/2%. Under the present conditions, we pay no Federal income tax on dividends received from the stock proposed to be sold. When this stock is sold and we take in payment therefor $30,000,000 7% bonds, the interest on the principal at the outset amounts to $2,100,000 and the Federal income tax upon this income is $262,500. As and when the principal of these bonds is reduced, the tax will be reduced; but so long as any part of the principal remains unpaid, the income received will be subject to a tax of 12-1/2% per annum. In addition to this, the 5% bonus payments made by the G.M.C. to the M.S.Co. annually will be subject to Federal income tax of 12-1/2%. As to whether or not the managers holding stock in the M.S. Co. will be taxed in accordance with their interest in these annual payments, is a question which cannot be conclusively answered at this time. While I incline to the opinion that they are not subject to an annual tax because of the uncertainty as to the fact of their receiving

any benefit during the taxable year, it is sufficient to say that, in event they are held to be subject to this tax, they are in no

worse position than they will be if they receive the equivalent awards in bonus stock under the present bonus plan.

I feel quite confident that no legal objection can be successfully urged against the duPont Company's selling the stock at $15 per share under the Brown-Raskob plan.

As to your suggestion that the desired result can be obtained by following the method you outline which, in its essence, I understand to be that the Managers Securities Company, in lieu of buying the stock from the duPont Company and P. S. duPont, solicit sealed bids for G.M.C. common stock in an amount not exceeding $30,000,000 worth and that the M.S. Co. pay for this stock so secured through this method in cash, that it raise $4,000,000 cash by the sale of its own stock to the managers and that it borrow the remaining $26,000,000 necessary to complete the purchase from the G.M.C., securing the payment of the moneys borrowed by a pledge of the stock so purchased:

This being done, I assume that the dividends received on the stock as well as the annual 5% payments, if any, will be applied to the discharge of the indebtedness.

My first observation on this is my belief that the requisite amount of stock cannot be obtained by this method at a reasonable price. However, this is a matter of opinion. My second observation is that Section 36 of the Corporation Laws of Delaware provides that no corporation created under "this Chapter" shall make any loan to any stock-

holder upon the security of the stock of the corporation,

and if any such loan be made the officer or officers who make it or assent thereto shall be jointly and severally liable until the repayment of the sum so loaned with interest. Nor shall any corporation created under "this Chapter" take as security for any debt a lien upon any part of its capital stock unless such lien shall be necessary to prevent loss upon a debt previously contracted. The only consequence of a disregard of this statute is to make such officers and directors as assent to the loan personally, jointly and severally, liable for the debt so secured. The officers and directors of the G.M.C. may or may not decide to assume this responsibility. In any event, I think they should not be subjected to this liability without their consent. Except as indicated above, the modification of the plan suggested by you in the communication is free from legal objections. However, the following may be noted: duPont Company could not sell any shares of G.M.C. common stock as such without subjecting itself to a Federal tax on the profits it would make in such a sale, being the difference between the cost of the stock and the selling price. In order to avoid liability for profit taxes, it will be necessary to sell the equivalent in an original issue of stock in the duPont American Industries. To do so would involve reorganization of the duPont American Industries substantially in the manner outlined in the Brown-Raskob plan. The interest received by the G. M. C. on the $26,000,000 loaned the M.S. Co. would be subject to the Federal income tax applicable to corporations. Would also add that the transfer tax on the sale of 1,667,000 shares of G.M.C. common, if this stock should be sold, would be $33,340. The profit

tax and the transfer tax would form a substantial obstacle to our selling G.M.C. common as such.

Respectfully submitted,

General Counsel.

L/G

NOTE: "1167.A1" is written in upper right corner of first page and "EXTRA COPY" is stamped at top right of first page.

Defendant's Exhibit (DP) No. 93

The Dayton Engineering Laboratories Co.

Dayton, Ohio

April 20, 1916.

Mr. Frederic W. Kurtz,
c/o E.I.Du Pont de Nemours & Co.
Henry Clay P. O., Delaware.

5859

Dear Sir:

I have your letter of April 18th. The talk to which Mr. Clarkson refers was given at Cleveland, and was an off-hand series of statements relative to the fuel situation. We do not happen to have any copies of this, as it was given more just as a talk, and I do not believe had in it any vital stuff relative to the keronene problem.

We are doing a little investigation work here on quite a number of types of fuels, but have nothing which would be of any definite value to anybody. I will be very glad to keep you in touch with this thing, and any time that we get anything of interest we will be glad to give you the benefit of it. We are doing this more from the standpoint of acquainting ourselves with the problem, rather than with the idea of commercializing either the apparatus or the fuel.

The writer is revamping this talk to be given on the boat trip of the S. A. E., and, perhaps, that will contain a little more definite stuff than the Cleveland talk did, and I shall be very glad to send you copy of that when it is ready.

Yours very truly,

THE DAYTON ENGINEERING LABORATORIES CO.

Vice President.

cfk-b

3584

NOTE: At upper right is written "NES-558" below which is written the letter "W"; signature is C. F. Kettering.

Defendant's Exhibit (DP) No. 94

(Letterhead of)

5860

E. I. DU PONT DE NEMOURS & COMPANY
(INCORPORATED)
CHEMICAL DEPARTMENT
Wilmington, Delaware

Copy to: Mr. Irenee duPont
Mr. Lammot duPont
Mr. John Raskob.

February 2, 1920.

Mr. C. F. Kettering, Pres.,
The Dayton Engineering Laboratories Co.,
Dayton, Ohio.

Dear Sir:—

OUR FILE RW-126-4. MOTOR FUELS.

Enclosure: Copy of letter from Eastern Laboratory of January 30th.

I have asked the Eastern Laboratory to recapitulate the motor fuel work with a view to giving me the present status of the whole problem. I consider that the enclosed letter is important because of its bearing on the matter you had in mind when we discussed this motor fuel problem in New York during the first week in January. You felt that, in view of the obvious urgency for a solution of the fuel problem, the work on the utilization of aromatic amines should be pushed as rapidly as possible. I am sure that this entirely coincides with my views. I have felt, however, that we were not quite in a position to decide how much knock sup-

2585

pressor should be added because the composition of motor fuel which would best serve to supplement the insufficient supplies of gasoline has been uncertain and, I feel, is at this time still somewhat uncertain. It is obvious that until we can decide with a reasonable degree of certainty how much kerosene or other higher boiling fractions will be available for introduction into gasoline the question of the price differential between these various distillates will be open. It is further obvious that the amount and nature of knock suppressants which can be employed economically

depends upon the price differential between the hypothetical composite fuel and that of gasoline.

I have called Mr. Midgley's attention to the fact that the supply of aromatic amines will be determined largely by the demands of the dyestuff and rubber industries for these materials. It is obvious here again that any greatly increased demand for the aromatic amines may quickly put the price to a point where they will not be economically available for use as knock suppressors. It occurred to me some time ago that another possible solution of the problem of knock suppressants lay in the utilization of the unsaturated compounds present in cracked hydrocarbons. I have called your attention to the fact that certain unsaturated hydrocarbons such as olefines can readily be transformed into diamines. I have asked the Eastern Laboratory to prepare diamines of this nature from cracked hydrocarbons with a view to studying their properties, and this work is well under way.

In connection with the preparation of amino bodies produced by cracking, such as olefines, I would like to call your attention to the probable considerably lower cost of such diamines as compared with the best cost of aromatic amines

which we can hope for. There are so many obvious factors involved in the possibility of preparing diamines from hydrocarbons produced by cracking that I feel this work should be urged forward with all possible speed and I have instructed the Eastern Laboratory accordingly. I have already prepared patent applications on the use of diamines in motor fuels.

There are certain questions in connection with such patents

as we may apply for from time to time in connection with our work on motor fuels or other General Motors problems which we can advantageously discuss as soon as you, Dr. Clements and I can arrange to go into this whole question of cooperation.

In conclusion, it seems to me that there is no reason why we should not proceed directly to the use of the aromatic amines as knock suppressants just as soon as we can reach a definite decision as to the method by which kerosene will be employed. I feel that the decision on this subject depends in a very large measure on the results of the experiments at present under way in the laboratories of the Dayton Metal Products Company, and I also feel that we should arrange for a conference at which an attempt will be made to decide this important question at the earliest feasible date.

I should like particularly to call attention to the altered complexion of the motor fuel problem in view of the probability that kerosene is not available to a sufficient extent to materially increase the supply of motor fuel. This fact has led us all to think about the possible utilization of fuel oil in the motor and I believe there are certain other questions such as the question of a blended fuel containing con-

stituents other than fuel oil which could advantageously receive close attention at this time. We should like very much to have the benefit of your thought on these points.

With kind personal regards, I remain

Yours very truly,

C. M. Stine.

ASSISTANT DIRECTOR.

CMS:AR

NOTE: "8" above a check mark and "X-1100" are written at top of first page; "RECEIVED FEB 3 1920 LAMMOT DUPONT" is stamped in upper right of first page; "RETURN TO EXECUTIVE COMMITTEE ROOM 9069" is stamped at bottom of first and third pages. Scoring under and check mark after "Mr. Lammot du Pont" at top of first page are by hand. Italics indicate handwriting.

Defendant's Exhibit (DP) No. 95

Letterhead of

E. I. du PONT de NEMOURS & COMPANY
(Incorporated)
Chemical Department
Wilmington, Delaware

May 1, 1920.

Mr. Lammot du Pont:
Our File RW-126-4.
Knock Suppressors for Automobile Motors.

It seems to me that the real object of Mr. Kettering's visit here on April 22nd was to see if he could interest the du Pont Company in the manufacture of aniline on a large scale for wholesale treatment of motor fuels with a view to suppressing the knock and increasing the efficiency of the motor. I do not know whether Mr. Raskob may have discussed this question with him, but there is no doubt in my mind that Mr. Kettering considers this the most important thing in connection with the motor fuel problem at the present time.

There are many angles to this question of whether the du Pont Company would be interested in enlarging its capacity for the production of aniline to serve as a knock suppressant. First is the question of what advantage could acrue to the du Pont Company through making the considerable expenditures necessary to produce largely increased amounts of aniline. This involves the question of the nature of the patents which the General Motors Corporation may have taken out or may contemplate taking out covering the use of aniline and similar aromatic amines as knock suppressors. It involves not only the validity of these patents but also the question of whether someone is likely to get something much better than aromatic amines to serve the same purpose in the near future.

There is the question of how thoroughly the General Motors

may have canvassed the motor fuel situation and *their conconclusions* as a result of their consideration of the problem *and* there is the question of the degree to which we can depend upon the accuracy of their conclusions. This involves not merely the question of the thoroughness and completeness of the laboratory work which may have been done on the motor fuel problem and on this particular phase of knock suppressors, but also the thoroughness of their canvass of the commercial field; i.e., the correct estimate of all the various sources of supply of probable or possible motor fuels, and their availability both in point of time and quantity.

It seems to me that we cannot avoid answering Mr. Kettering's question as to the du Pont Company's interest in the manufacture of aniline or other aromatic amines for knock suppressors. It seems to me further, that we are scarcely in position to answer this question without a rather careful consideration of both the technical and commercial phases of the question. I should appreciate an expression of your opinion in this connection.

C. M. Stine,
Assistant Director for Research.

CMS:AR

NOTE: At upper right of 1st page is written X-1100; at upper middle of first page appear a check mark and the figure "8"; across the first page is stamped "Answered, May 7, 1920 Lammot du Pont" and "Received, May 3, 1920, Lammot du Pont"; on both pages is stamped "Return to Executive Committee Room 9069"; italics indicate handwriting.

2

Defendant's Exhibit (DP) No. 96

THE DAYTON ENGINEERING LABORATORIES CO.

August 17, 1920.

Mr. L. duPont, Vice President,
E.I. duPont de Nemours & Company,
Wilmington, Del.

My dear Mr. duPont:—

I am in receipt of your very kind letter of August 14 and note what you say.

I should, of course, anticipate that if the manufacture of aniline could not be done with profit it would not be a success as a commercial venture. The thing I should like for you to do for me is to tell me what aniline would cost in large quantities and in what quantities it would have to be produced in order to make it a profitable investment for you. In other words, if we were to undertake the distribution of it, in what quantities would you have to make it and at what price?

If you will advise me on this matter I think I can tell you directly whether such a thing would be practical or not.

With kindest regards, I am

Yours very truly,

President.

Copy for lab.

NOTE: Across the top of the page is stamped "Copy"; at upper right is written "K file" followed by illegible letters and the figure "1921".

Defendant's Exhibit (DP) No. 97

5867

April 15, 1921.

Dr. C. K. Stine,
Assistant Director,
E.I.duPont deNemours & Co.,
Wilmington, Delaware.

My dear Dr. Stine:

Have had your favor of April 8, but have neglected answering it due to some rather unforeseen developments at this end. I know you will be interested in hearing that we have recently discovered an antiknock material which is twenty-four times as strong as aniline, volumetrically. The material looks very, very practical, and I feel sure that this is going to radically change our previous plans, obsoleting the injector; in fact, obsoleting the use of aniline, or coal tar products, in any way, shape, or form, except, possibly, as carbon removers.

As you will readily appreciate, this is so revolutionary with respect to the work in progress, that I think it would be very advisable to hold up the work at the Eastern Laboratory until we know more exactly where we are. This new antiknock material throws a very considerable light upon the entire subject of knocking and antiknocking. Until we have considerable more data on this point, I really think we might be wasting money to have any work done at the Eastern Laboratory.

Always with the very kindest of personal regards, I am,

Very truly yours,

Chief Engineer,
Fuel Research Section.

TM-Jr:M.

3592

Defendant's Exhibit (DP) No. 98 5868

EXTRACT FROM MINUTES OF FINANCE COMMITTEE
MEETING #258

SEPTEMBER EIGHTEENTH, 1922

E. I. DU PONT DE NEMOURS & COMPANY

TETRA-ETHYL LEAD—PATENTS AND SECRET PROCESSES:

The following resolution was offered and unanimously adopted:

WHEREAS, this Company is engaged in some chemical research work for the General Motors Corporation in connection with the production of Tetra-Ethyl Lead; and

WHEREAS, in the conduct of such work this Company may develop secret processes and processes subject to patent which will involve our taking out patents for the protection of our customer, namely, the General Motors Corporation;

RESOLVED, that it is the sense of this Committee that all patents so taken out and all secret processes so developed are the property of the General Motors Corporation, and that such patents should be assigned to and such secret processes should be turned over to the General Motors Corporation;

I duP ✓

RESOLVED FURTHER, that the President or any Vice President of this Company, together with the Secretary or any Assistant Secretary be and they are hereby authorized to execute the necessary papers to carry the above into effect.

NOTE: "RETURN TO EXECUTIVE COMMITTEE ROOM 9069" is stamped at bottom of page. Check mark in left margin is by hand. Italics indicate handwriting.

EXCERPT FROM MINUTES OF MEETING #637 OF THE EXECUTIVE COMMITTEE,

E. I. DU PONT DE NEMOURS & COMPANY,

HELD IN WILMINGTON, DELAWARE, ON SEPTEMBER 3, 1924.

A

* * * * *

****

PROPOSED CONTRACT WITH ETHYL GASOLINE COMPANY FOR MANUFACTURE AND DELIVERY OF TETRA ETHYL LEAD:

Mr. W. F. Harrington, General Manager, Dyestuffs Department, appeared before the Committee and stated that he was negotiating a contract with the Ethyl Gasoline Company (a company recently organized by the Standard Oil Company of New Jersey and General Motors Corporation on a fifty-fifty basis) under which we agree to build a plant capable of producing one thousand gallons per day of Tetra Ethyl Lead by the Ethyl Chloride process, and to deliver to them from said plant prior to April 1, 1926 a minimum of 4,000,000 pounds and a maximum of 5,000,000 pounds at $1.17 per pound; also that we will continue to deliver to them after the expiration of our present contract, estimated in November of this year, Tetra Ethyl Lead from our Ethyl Bromide plant at $1.66 per pound, with the understanding that deliveries from said plant at said price may continue until April 1, 1925 (at which time it is estimated the Ethyl Chloride plant will be operating at full production—1,000 gallons per day) and thereafter until such time as the Ethyl Gasoline Company serve notice on us to stop deliveries from said plant. After full discussion, it was moved and unanimously carried that Mr. Harrington be authorized to proceed

with negotiations with the Ethyl Gasoline Company along the lines indicated above.

****

I hereby certify that the foregoing is a true excerpt from minutes of meeting #637 of the Executive Committee, E. I. du Pont de Nemours & Company, held in Wilmington, Delaware, on September 3, 1924.

F. G. Hess

SEC'Y, EXECUTIVE COMMITTEE
E. I. DU PONT DE NEMOURS & COMPANY

December 29, 1948

NOTE: At lower right is written "GMC-14"; at lower left is stamped "E. I. du Pont de Nemours & Co. * Delaware * Founded 1802 * Seal"; italics indicate handwriting.

Defendant's Exhibit (DP) No. 99A

Mr. Alfred P. Sloan, Sr.
324 W. 57th Street,
New York City.

5871

Dear Mr. Sloan:-

This will acknowledge copy of your letter of December 4th, addressed to Mr. Teeple on the subject of proposed investigation of poisoning effects of ethyl gas, etc.

I think that it is unwise to delay reply concerning such an investigation and am sorry so much time has already passed since Sergeant-General H.S.Cummings' letter of November 28th.

From the point of view of manufacture of tetraethyl lead I would say that it is imperative that a competent man see the Sergeant-General at once, preferably soliciting the aid of General Fries and explain to him -

1. That Prof. Henderson knows nothing of the manufacture and has never been visited our plant which is the only commercial one in existence.

2. The accident at Bayway was in an experimental unit of a different design and by a different method from ours. It was manned by workmen who were not familiar with handling poisonous materials.

3. After a year's operation we believe the manufacture of tetraethyl lead is far less poisonous than such an every-day commodity as anilin.

3596

5872

Mr. Alfred P. Sloan—#3

4. There is no public body who has had the experience to enable attempt to lay down rules for the manufacture of tetraethyl lead which would be as wise as those which we have evolved by actual practice and no good can come from such a commissions work.

Am sure that the Sergeant-General will see the matter right and pay no attention to that phase of the investigation.

Incidentally, I spoke to General Fries last Tuesday and feel sure that he does not consider the manufacture of tetraethyl lead as a hazard when properly operated by experienced men. He told me they went through the identical kind of trouble when they started manufacturing mustard gas and other poisonous materials and that the dangers are gradually eliminated by experience. Incidentally he is very keen on the use of ethyl gas and has carried on quite extensive research in the poisoning effect of tetraethyl lead on animals. He is 100% with us, purely based on a scientific point of view.

Am phoning you today to get your acquiescence to letting one of our men see the Sergeant-General at the earliest possible moment.

Sincerely yours,

Irénée du Pont, President

3507

Defendant's Exhibit (DP) No. 99B

5873

COPY FOR MR. W. F. HARRINGTON.

June 8, 1925.

Mr. Alfred P. Sloan,
General Motors Corp.
224 W. 57th Street,
New York City.

Dear Mr. Sloan:—

I was sorry to find you could not attend the Yama Conference although I hardly expected it in view of your long trip just finished. Also, I was disappointed to find that Mr. Bedford was not there. I wanted to discuss with him the question of ethyl gas and to try to put some courage into your Standard Oil partners.

I am a little disturbed for fear that the Ethyl Gas will not actively pursue the Sub-Committee appointed by the Surgeon General to report on ethyl gas as a possible menace to public health. If it is not pushed vigorously the topic will carry along with nothing done either for or against for a protracted period. The evidence which was submitted at the hearing (see Mr. Webb's report May 20th) makes it perfectly clear in my mind that nothing has developed which would warrant the Surgeon General finding that the sale of ethyl gas or its use in automobiles constituted a public health menace. The Committee must make this finding on the evidence and my only fear is that they will delay in making it or that they will couple with that finding a recommendation that certain research be carried out in an endeavor to make sure that the evidence submitted is really representative. The latter may run into years of work unless the Ethyl Gas Corp. takes the position that time is too important to warrant considering unduly the remote contingency fear.

I think it would be worth while for you, or if you would prefer for me, representing you from the General Motors point of view, to give Mr. Webb some encouragement and support of a more or less official character. Individually I have been doing my best but of course that cannot carry the weight of official responsibility.

Sincerely yours,

Irénée du Pont

NOTE: "C-26-E [In GM-9]" and "[Response by Brandt, on 6/9/24, in C-26]" are written in upper right of first page. "FILE COPY" is printed across each page.

Defendant's Exhibit (DP) No. 100

E. I. DU PONT DE NEMOURS & COMPANY
(INCORPORATED)
DEVELOPMENT DEPARTMENT
WILMINGTON, DELAWARE

5875

November 28, 1934

Copy to:
W. F. Harrington, Gen. Mgr.
Irenee duPont, President

C. M. A. STINE - CHEMICAL DIRECTOR

In my talk Wednesday with Mr. Midgeley he stated that he considered it proper that the duPont Company should be paid for whatever work it may do on the bromine subject for the Ethyl Gasoline Corporation. However, he also stated that this would have to be decided by the Board of Directors of the Ethyl Gasoline Corporation and he did not want to take the matter up with his Board at this time because he did not have any definite proposition. He therefore suggested that we finish the preliminary laboratory work which is now under way and on its completion we should endeavor to arrive at some decision as to what the duPont Company should do, and at such time make a definite arrangement with the Ethyl Gasoline Corporation.

I advised Mr. Midgeley that our accounts had been kept in such a way that we can at any time show our expenses in connection with bromine and if we make an arrangement with the Ethyl Gasoline Corporation we should undoubtedly cover our past expenses as well as our future expenditures.

DIRECTOR

FCiM

3600

Defendant's Exhibit (DP) No. 101 5876

December 8, 1924

Copy: c/o General Motors Research Corp.
Dayton, Ohio

Mr. T. J. Midgeley, Jr.
Ethyl Gasoline Corporation
25 Broadway
New York City

Dear Mr. Midgeley:

Our preliminary experiments with the extraction of bromine from sea water are now pretty nearly finished. I am satisfied that we could not do any more work with this subject beyond the present week until some understanding has been reached between us. In fact it looks now as if we will finish this preliminary work not later than the 10th so that we are ready to discuss the further handling of the subject with you any time convenient to yourself.

I would therefore suggest that we get together as quickly as you can arrange it in order to arrive at some understanding, particularly with respect to whether you think the du Pont Company should do any more work, and if so, what form of contract should be arranged so that the matter may be decided officially and arranged accordingly by your Board of Directors and our Executive Committee.

I understand that you are going to be in the West all of this week but so far as I know now I can see you any day next week either in Wilmington or New York.

Yours very truly,

FIN SPARRE
Director

FS:M.

NOTE: Diagonally across the page is stamped "File Copy". The signature "Fin Sparre" has been placed on the document by rubber stamp.

E

Defendant's Exhibit (DP) No. 102

December 30, 1924

Mr. Thomas Midgley, Jr.
Ethyl Gasoline Corporation,
25 Broadway,
New York City.

Dear Mr. Midgley:—

In accordance with resolution of the Board of Directors of the Ethyl Gasoline Corporation, held December 23d, those appointed to arrange for the building of the anilin tri-bromide plant decided that it would be best for the du Pont Co. to build and put in operation a plant (the site to be selected by the du Pont Co. with your approval) of a capacity of 100,000 lbs. per month (based on a 70% yield of the bromine in the water handled). The du Pont Co. will charge for its services actual cost of material, labor and salaries of those on the ground plus a fee of $20,000 to cover expert supervision from Wilmington, accounting, administrative and profit and such laboratory or semi-works scale experimentation as we deem advisable to carry out without delaying the immediate construction of the plant and necessary in the design thereof.

It is not expected that this experimental work will be in any wise complete, for manifestly a complete research would cost many times the proposed fee and would consume so much time as to delay the construction of the plant. In other words, the Ethyl Gasoline Corp. are gambling on going into a "quarter-baked" process on a plant scale, knowing that the money will be wasted if the project does not work out, but on the other hand knowing that they will reap a harvest if it should go well.

We will render you accounts monthly covering the cost of the work to date and will add a charge of $2000 a month on account of the commission to the time the project is completed. If the project is completed before ten months the balance will be then due.

It is understood that the plant on completion is the property of the Ethyl Gasoline Corporation. If it should fail to function they can do with it what they wish. If it should function we will get together and work out across the table what is best for all concerned in the way of operating it; i.e. whether it would be best for du Pont to purchase and run as a commercial undertaking or whether it would be better to operate for the account of the Ethyl Gasoline Corporation on a commission basis or whether du Pont should drop out of the picture and have the Ethyl Gasoline Corporation run it themselves.

It is understood, also, that should a process be worked out the du Pont Co. is free to use the process for the production of anilin tri-bromine or other materials for its general business without the payment of royalty should any step be patentable.

The writing of this letter has been delayed as I understood on Tuesday last that Kettering would outline the letter to me and I simply accept it. He told me yesterday that he had the reverse idea. My apologies if I have been at fault.

In anticipation of the acceptance of this letter we have already started an experiment on the beach near Ocean City, Maryland, to try to determine in a rough measure of the size of the floatation basin required. A truck with

pumps, pipe and the necessary chemicals has been despatched there and it is expected that the cost of this experiment will be charge-

able to our fee above referred to.

Please approve one copy, which is attached, and return, to oblige.

Very truly yours,

IRÉNÉE DU PONT, President

APPROVED BY:—

.....

.....

NOTE: At upper right on first page is written "Copy to Mr. Alfred P. Sloan" beneath which appear the initials "RM"; the initials "RM" appear at upper right on the second and third pages.

Defendant's Exhibit (DP) No. 103

January 30, 1925.

Copy to Messrs. Fin Sparre
J. B. E. Edge

Mr. A. P. Sloan, President,
General Motors Corporation,
234 West 57th Street,
New York City.

Dear Sir:

I agree with you that it is important to have clear understandings in order to fix compensation which Ethyl Gas should pay either to General Motors, Standard Oil or duPont for services rendered. I have tried to bear in mind that the charge should be fair from both sides and should be arranged for in advance of any undertaking.

I think there is no room for doubt either as to explicitness or fairness in our Tetra Ethyl Lead contracts, and in our arrangement to build a plant which will have for its object an endeavor to extract Bromine from sea water economically. The "$20,000 commission" payable by Ethyl Gas to duPont from that contract is not of the nature of a profit but rather a fund which they could use to cover time of important men looking after the undertaking, and such minor experiments as we could perform in the very short time between the date of contract and actualconstruction. Preliminary experiments at Ocean City of this character clearly indicated the great value even in negative information. When Midgley saw the results he agreed

—2—

with us that work should be continued at Ocean City to obtain data, and authorized us to spend up to $20,000 addi-

tional in carrying on semi-works research there. I think that is clear and no profit to duPont is contemplated.

With regard to miscellaneous negotiations for the purchase of Bromine and other materials in Germany, I think our Purchasing Department in rendering Ethyl Gasoline Corporation bills covering the cost of the work on exactly the same basis which they bill our several departments. I do not think this is too generous on duPont's part because the information we incidentally obtain is of value, and the good will which we should succeed in obtaining from Ethyl Gas I think is compensation enough.

Yours very truly,

Irénée duPont, President.

NOTE: Across the top of the first page appear the stamps: "Noted F.S.", "Noted R & M", and referred to "F. S. MacGregor, for attention"; following the name "J. B. E. Edge" at the top of the first page is a large check mark beneath which is stamped "Received Feb. 2, 1925 Development"; at lower right of both pages is written "GMC-696"; check mark is by hand.

Defendant's Exhibit (DP) No. 104

COPY

April 2, 1925.

Mr. Thomas Midgley, Jr.,
Ethyl Gasoline Corporation,
25 Broadway,
New York City.

Dear Mr. Midgley:—

Under our contract we agreed not to manufacture tetra ethyl lead by the bromine method after April 15th; this in order to conserve all the available bromine supply for your uses as ethylene-di-bromide.

The consumption of bromine per pound of tetra ethyl lead has been decreasing quite rapidly in our present plant. Our operating department consider it a far safer route than the chlorine method. Without wishing to in any wise go back on our agreement, I am wondering if we can uncover, through our Development Department, additional sources of bromine, whether you would not be willing for us to operate the plant on such a supply?

Am writing you this in case I should fail to get you on the phone to discuss it this morning and also to make a record of the suggestion.

Very truly yours,

IRENEE DUPONT, President.

NOTE: At lower right is written "GMC-694"; in right margin appear four small illegible figures.

Defendant's Exhibit (DP) No. 105

5883

April 6, 1925.

Mr. Thos. F. Midgley, Jr.,
Ethyl Gasoline Corporation,
25 Broadway,
New York City.

Dear Sir:

Just to summarize the conclusion of this morning's conversation with Dr. Sparre and F. S. MacGregor of our Company and Dr. Edgar of yours. The recommendation is the Ethyl Gas Corporation should designate those sources of supply of Bromine in which they are interested as a source of supply of Bromine for their needs, leaving other sources temporarily available for duPont Company if they should see fit to endeavor to obtain supplies therefrom. Of course, they could not undertake such a development unless it was previously agreed that the clause of our present contract prohibiting the operation of the Tetraethyl Lead plant by the Ethyl Bromine route was waived so far as utilizing new supplies of Bromine is concerned.

I don't know if it would be to the duPont Company's interest to attempt a development on their own account when this is accomplished, but it would at least op en the door for a possibility of considering the advisability.

FILE COPY

3608

duPont would have an interest in developing an independent supply under that revision so as to insure production of Ethyl Lead even if the Ethyl Chloride plant was not available, and should the Ethyl Chloride plant supply all the Ethyl Lead needed we would still have the opportunity of selling Bromine from the developed supply to you should you have need for it.

Please let me hear from you on the matter, and oblige,

Yours very truly,

Irénée duPont, President.

FILE COPY

Mr. E. W. Webb, President,
Ethyl Gasoline Corp.
25 Broadway,
New York City.

Dear Mr. Webb:

From the newspapers I understand Ethyl Gas and Dow Chemical are going to make a joint endeavor to secure bromine from sea water at some point on the North Carolina Coast.

Without knowing the process which you propose to use I would like to remind you that if it depends on filtering out a precipitated compound of bromine, the sediment in litoral waters along the continental area makes the filtration job much more difficult where large volume of the liquid must be handled.

Hope you do not think I am "butting" in on this but it is one of the results obtained in the earlier experiment at Rehoboth, Del., before the good ship "Ethyl" was sent to sea.

I think the trouble can be entirely obviated if you were to put the plant on the shore of Porto Rico, which is washed by the North equatorial current and where there is, therefore, practically zero sediment in the ocean water, which water is also about 10% higher in bromine than the Atlantic Coast water.

Very truly yours,

k

NOTE: "VC 25." is written in upper right corner of page and "FILE COPY" is printed across page. Underscoring is by hand.

Defendant's Exhibit (DP) No. 107

5886

Mr. E. W. Webb, President
Ethyl Gasoline Corporation
135 E. 42nd Street
New York City

Dear Mr. Webb:

I was pleased with Mr. Mittnacht's letter and the annual report of the Ethyl Gasoline Corporation. You are certainly to be congratulated on the progress made and I have no doubt it will continue and even augment.

I see that we have put about a million dollars into the bromine plant. I have had no information about it except rumor and would like, if you can do so, that you advise me just how much bromine we are obtaining and the likely cost, both present and future.

Yours sincerely,

wm

NOTE: "VC 25" is written in upper right corner of page and "FILE COPY" is printed across page.

ETHYL GASOLINE CORPORATION
CHRYSLER BUILDING
135 East 42nd Street

NEW YORK February 15, 1934.

Mr. Irénée du Pont,
Wilmington,
Delaware.

Dear Mr. du Pont:

The Dow Chemical Company and ourselves organized the Ethyl-Dow Chemical Company for the purpose of building and operating a shore plant for the extraction of bromine at Kure Beach, which is about eighteen miles south of Wilmington, North Carolina. Under the contract we were to advance up to one million dollars for the construction of the plant, for which we were to and have received six per cent cumulative preferred stock. Any amount beyond that was to be contributed equally by the two stockholding companies and they were to receive the same type of stock. The common stock is held equally by the two companies. The plant, although laid out to take care of any quantity of bromine we might require in the future, was designed initially to produce five hundred thousand pounds of ethylene dibromide a month. It is now producing at the rate of about four hundred thousand, but there is every reason to believe that there will be no serious difficulty in realizing the five hundred thousand pounds monthly after the plant has been in operation a little while.

In the contract between the Ethyl-Dow company and the Ethyl Corporation the former agrees to sell to the latter on monthly deliveries of five hundred thousand pounds or

less at 30¢. This price is gradually reduced on increased purchases to 25¢ per pound when the deliveries reach fourteen hundred thousand pounds a month.

There is to be set aside annually by the Ethyl-Dow Company a sum at least equal to 2¢ per pound of ethylene dibromide production for the purpose of gradually retiring the outstanding preferred stock.

It is estimated that the net cost to the Ethyl-Dow company for ethylene dibromide on present cost and production basis will be somewhere between 18¢ and 19¢ per pound, making proper allowances for depreciation, etc. If our requirement should necessitate the addition of other units (each unit being on a two hundred and fifty thousand pound per month basis), so that we would take as much as one million pounds a month, it is estimated the net cost to the Ethyl-Dow company will be approximately 16¢.

The Dow Chemical Company is obligated under the contract to grant to the Ethyl-Dow company a license under all patents relating to such industry which it now or may hereafter own or control. It is to make available to the Ethyl-Dow company all scientific, technical, engineering and other skill and data which it has attained or may attain in the field of bromide manufacturing, and to render at all times such assistance as it may have available for the purpose of supervising the maintenance and operation of said plant and the construction, maintenance and operation of any additions or expansions, to the same extent as if the company was wholly owned by the Dow Chemical Company.

—2—

There are six members of the board—three from the Dow company, consisting of Messrs. Willard Dow, Edwin

O. Barstow and Ivan F. Harlow. The two last named I am advised had more to do with the development of bromine and ethylene dibromide works at the Dow plant at Midland, Michigan, than any others in that organization. The three members of the board from this company are: Dr. Graham Edgar, who is in charge of our research work, Mr. Midgley and myself. The president of the company is Mr. Dow, the vice-president is Dr. Edgar, and the secretary and treasurer is Mr. Mittnacht, who as you know holds the same position in this company.

I wish it could be made convenient for you and other members of our Board to visit this plant sometime this year. You would undoubtedly find it most interesting.

I appreciate very much your. congratulations on the progress of our general business.

Sincerely yours,

Earle W. Webb

A:H

NOTE: "RECEIVED FEB 19 1934 LAMMOT DUPONT" is stamped in upper right of first page; "CMS", a large "S" encircled by hand, and "Lammot du Pont to note" are written at upper left of first page. Italics indicate handwriting.

November 3, 1921.

To EXECUTIVE COMMITTEE,

FROM CHEMICAL DIRECTOR.

OUR FILE RW-315.

Mr. Midgley of the General Motors Research Corporation was here last week, and asked us to undertake some work for them at an expenditure to be not over $12,000. He wishes this work done aside from the general agreement which is now being taken up between Mr. Lammot duPont and Mr. Kettering, and has asked us to draw up a contract embodying the ideas included in the contract, copy of which I am enclosing herewith.

This matter has been drawn up practically by the Legal Department, and I am sending same to you for your approval. I might say that we have very definite ideas as to how to undertake this problem, provided it meets with your approval.

CHARLES L. REESE,

CHEMICAL DIRECTOR.

CLR/S.

NOTE: "EXECUTIVE COMMITTEE SECY'S No. 6625" is stamped at upper right, and "RETURN TO EXECUTIVE COMMITTEE ROOM 9069" is stamped at bottom of page. "X-1100", See X-139", what appears to be "F. W. P.", and what appears to be "p." in a circle are written at top of page.

Defendant's Exhibit (DP) No. 110

5891

EXCERPT FROM MINUTES OF MEETING #467 OF THE EXECUTIVE COMMITTEE, E. I. DU PONT DE NEMOURS & COMPANY, HELD IN WILMINGTON, DELAWARE, ON NOVEMBER 30, 1921.

* * * * *

* * * * * * * * * *

AGREEMENT WITH GENERAL MOTORS RESEARCH CORPORATION COVERING WORK ON DEVELOPMENT OF NON-KNOCKING FUELS:

Letter was received from the Chemical Director dated November 23, 1921 (#6716), referring to this Committee's action of November 9, 1921 in approving an agreement with the General Motors Research Corporation for work at the Experimental Station on the development of non-knocking fuels. The Chemical Director enclosed a revised agreement containing certain modifications suggested by Mr. Midgley of the General Motors Research Corporation. These modifications were explained to the Committee personally by Dr. Reese, and after discussion the following resolution was offered and unanimously adopted:—

RESOLVED, that the revised agreement between E. I. duPont deNemours & Company and the General Motors Research Corporation re development of non-knocking fuels, as presented to this meeting by Dr. Chas. L. Reese, Chemical Director, be and the same is hereby approved, and the President or any Vice President, together with the Secretary or any Assistant Secretary, be and they are hereby authorized to execute same on behalf of this Company.

* * * * * * * * * *

H-3

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5892

I hereby certify that the foregoing is a true excerpt from minutes of meeting #467 of the Executive Committee, E. I. duPont deNemours & Company, held in Wilmington, Delaware, on November 30, 1921.

F. G. Hess
SEC'Y, EXECUTIVE COMMITTEE
E. I. DU PONT DE NEMOURS & COMPANY

December 22, 1948

NOTE: At lower right is written "GMC-9"; at lower left is stamped "E. I. du Pont de Nemours & Co. * Delaware * Founded—1802—Seal". Italics indicate handwriting.

3617

2

Defendant's Exhibit (DP) No. 111

5893

COPY

GENERAL MOTORS RESEARCH CORP.
Dayton, Ohio,
January 28, 1922.

Mr. Charles L. Reese, Chemical Dir.,
E. I. du Pont de Nemours & Co.,
Wilmington, Del.

Dear Mr. Reese:

File RW-126-4.

In conference with Mr. Midgley, regarding copy of contract forwarded by you with your letter of December 6, 1921, it has been decided that for the time being we would not be interested in entering into the aforementioned contract.

The reason for our reaching this decision is that our work at the Laboratories along fuel lines has taken an entirely different turn from what we expected.

We want to thank you for your past kindnesses and to assure you that if we decide to continue the work upon which this copy of agreement is predicated, we will take the matter up with you at that time.

Yours very truly,

(S.) F. B. MacNab
Business Manager.

NOTE: "Return to Executive Committee Room 9069" is stamped, and "GMC 1544" is written, at bottom of page.

Defendant's Exhibit (DP) No. 112

5894

March 18, 1922.

Mr. Frank A. Howard,
Standard Oil Company,
26 Broadway,
New York City.

My dear Mr. Howard: -

I have indeed, been wondering just why I have not heard from you and probably should have written you without waiting, but as matters are developing I could see really no harm in this delay and really was glad that you were responsible for it and not myself.

Very shortly after seeing you in Chicago, our research work took a very sudden turn in a direction that would indicate that it would be a mistake both on your part and on ours to enter into an agreement such as we discussed at that time. I must naturally apologize after the trouble that I put you to in the expectation that this problem would be solved at the refinery. However, as you will readily appreciate, one never knows just what tomorrow may hold in store in this research work. I am not in a position to discuss our recent results as yet, but believe me as soon as I am permitted to, I shall tell you everything that has transpired to cause this change of front on our part.

Under the circumstances of course, there is only one thing for me to advise you to do before your prolonged absence, and that is simply to leave matters with respect to us stand precisely as they are and I can assure you of our most hearty co-operation in the future.

With regard to co-operation on lubricating oil M.I.T., I am very glad that you are going to come in on this problem as I feel we will both benefit by the speed of this new arrangement.

Always with the kindest personal regards, I am

Very truly yours,

Chief Engineer,
Fuel Section.

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TM-Jr-D

E

Defendant's Exhibit (DP) No. 113

5895

E. I. DU PONT DE NEMOURS & COMPANY
(INCORPORATED)
CHEMICAL DEPARTMENT
WILMINGTON, DELAWARE
May 15, 1922.

MR. LAMMOT DU PONT:

OUR FILE RW-126-4.

Reference: Your note to Dr. Reese enclosing copy of recent letter from Mr. Kettering in connection with contract between the General Motors Research Corp. and the duPont Company's Chemical Department.

I am returning to you herewith the letter from Mr. C.F. Kettering dated May 8th to you. I am also enclosing our correspondence file from January 1st to date which contains the very limited exchange of letters that there has been between the Dayton crowd and ourselves. Will you please return this to our files when you have had an opportunity of reading it.

This correspondence file does not tell the whole story, however, You know that Dr. Reid, Prof. of Organic Chemistry at Johns Hopkins University, has for a couple of years been retained by us in a consulting capacity. A couple of times when Mr. Midgley has been on here for a discussion of his work Dr. Reid has been present and has contributed somewhat to the discussion of some of the organic chemical questions involved. Further, at my suggestion, last year Mr. Midgley got in touch with Dr. Reid and they exchanged information on the preparation of amines from alcohols. I tell you this in order that you may appreciate that Mr. Midgley knew enough of Dr. Reid to

appreciate that he might be of considerable assistance to them in connection with purely organic chemical problems. It was, therefore, not sur-

prising to us that Mr. Midgley and Dr. Reid should discuss Mr. Midgley's work during the Birmingham meeting of the American Chemical Society this spring. Mr. Midgley suggested to Dr. Reid that he come to Dayton and look over their laboratory and discuss some of their problems. Dr. Reese suggested to Mr. Midgley that the proper way to request Dr. Reid's services was through a letter to us, since we had contracted for all of Dr. Reid's spare time. This suggestion I believe was made in the course of the three-cornered conversation between Messrs. Midgley, Reid and Reese. I am not certain, but I believe Dr. Reid went home from Birmingham by way of Dayton with Mr. Midgley and spent a day with Mr. Midgley in Dayton. I propose to ask Dr. Reid the next time he is in Wilmington.

The foregoing, then, together with the attached correspondence file covers our relations with the Dayton people since January 1st, 1922. I believe that Mr. Midgley has purposely refrained from asking any advice or assistance from us since the first of the year.

C. M. Stine.

C. M. STINE, ASST. DIRECTOR.

CMS:R

NOTE: "Received May 16 1922 Lammot du Pont" and "Answered May 26 1922 Lammot du Pont" are stamped at top of first page and "Return to Executive Committee Room 9069" is stamped at bottom of second page. "GMC 1554" is written at bottom of each page. Italics indicate handwriting. Letterhead, of du Pont Production Department, in upper left corner has been overprinted with large X's. A large check mark appears at the top of the first page.

Defendant's Exhibit (DP) No. 115

5807

June 14th, 1924.

Mr. Thomas Midgley, Jr., V.P.,
General Motors Chemical Co.,
Dayton, Ohio.

Dear Midgley:—

We have made an examination of the Standard Oil Company of New Jersey's process for the manufacture of Tetra Ethyl Lead by the Ethyl Chloride method, and have been able to duplicate their accomplishments. The process followed is essentially the same as their process. After having accomplished the same yields as claimed by them, a comparative cost has been made of the Ethyl Chloride and the Ethyl Bromide processes, with the following results for material costs only. The Standard Oil Company of New Jersey's Ethyl Chloride process—approximately 48¢; the Ethyl Bromide process, with what we look upon as reasonable goal yields and recoveries—approximately 52¢. A detail of the make up of these cost calculations is attached.

No figures for the cost exclusive of materials are given in those estimates, because of the fact that it is almost impossible to estimate this figure for the Ethyl Chloride process with the information which we have so far obtained. We believe, however, that it is safe to assume that the cost exclusive of materials will be no greater with the Ethyl Chloride process, and should be somewhat less on account of the fact that this process involves less complicated recovery operations and less purification of the final product. Moreover, it should be pointed out that in the Ethyl Bromide process the recoveries have a much larger

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effect on the net cost of the finished product, and although we believe that the assumptions made as to recoveries are comparable for the two processes, failure to obtain the percentage recovery assumed would produce much more effect on the net result in the case of the Ethyl Bromide process.

Mr. Thomas Midgley, Jr., V.P.—2 6/14/24

The probabilities are that the investment will be less for the Ethyl Chloride process than for the Ethyl Bromide process, because there is very much more work involved in the recovery of Bromine than there is in the recovery of Ethyl Chloride. We have already agreed that a further extension of the manufacture of Tetra Ethyl Lead by the Ethyl Bromide process is impossible because of the lack of available supplies of Bromine.

We are giving this information to you with sufficient extra copies for you to transmit the same to the Standard Oil Company of New Jersey, or to use it in any other way that you see fit.

Very truly yours,

W. F. HARRINGTON,
ASST. GENERAL MANAGER.

WFH-M

COMPARATIVE MATERIAL COSTS OF TETRA ETHYL LEAD BY ETHYL CHLORIDE OR ETHYL BROMIDE PROCESS

		Ethyl Chloride			Ethyl Bromide	
Ingredient	Price	Used per 100 lbs.	Cost	Used per 100 lbs.	Cost
Lead	$ 7.50	366.3	$27.50	184.0	$ 13.80
Sodium	18.25	40.7	7.43	36.2	6.60
Ethyl Chloride	22.00	161.3	35.50		
Ethyl Bromide	32.00			325.5	104.16
Sod. Sulphide 60%	3.00	12.5	0.38	22.0	0.66
Calc. Hypochlorite	2.50	4.5	0.11	4.5	0.11
Magnesium Bromide	37.00			4.5	1.66
Dimethylaniline	33.00			17.6	5.81
Soda Ash	1.50			7.3	0.11
Sulphuric	0.60			20.8	0.13
Total Cost—			$70.92		$133.04
Recoveries					
Lead 75% of excess @ 5¢		225.0	$11.25	90.0	$ 4.50
Ethyl Chloride 33 1/3%		53.8	11.83		
Ethyl Bromide				135.0	43.20
Sodium Bromide	19¢			160.5	30.50
D. M. A. 50%	33¢			8.8	2.90
Total Credits—			$23.08		$ 81.10
Net Materials Cost—			$47.84		$ 51.94

June 13, 1924.

NOTE: Diagonally across both pages of the letter is stamped "File Copy."

Defendant's Exhibit (DP) No. 116 5900

ETHYL GASOLINE CORPORATION
25 BROADWAY

NEW YORK August 6, 1925.

IN REPLY PLEASE REFER TO
Subject: Lead Contract

Messrs. Alfred P. Sloan, Jr. and Walter C. Teagle,
Directors of Ethyl Gasoline Corporation.

Gentlemen:

I will attempt to bring you up to date on the negotiations for adjustment.

Enclosed is copy of my letter to Mr. duPont of July 27th.

At Mr. Harrington's request Mr. Mittnacht and I went to Wilmington last Thursday where the matters referred to in my letter were discussed between Messrs. duPont and Harrington and ourselves. The items were taken up in the order of presentation inmy letter, and will likewise be treated here.

Power Plant Cost—$84,582.00

Mr. Harrington stated that there was appropriated in 1920 for the construction of an additional power house and equipment the sum of $549,268. of which$375,451. had been spent prior to January 1923. That the work had been stopped because of business depression in the latter part of 1920.

That the sum of $84,582. charged to us represented one-half of $169,163.59 which was necessary to complete the installation of four boilers, two of which were for their own purposes and two for the ethyl chloride plant. That it was foundnecessary to complete the work on these two boilers after signing the lead contract, and that such work

3625

would not have been done except for the contract. These two boilers were taken out of their reserve stores

and together with the necessary equipment were of the following value:

2 boilers	$. 35,335
1 turbine engine	2,471
1 economizer	18,767
2 soot blowers	1,436
1 duplex fan	3,340
	$ 61,350

That in addition $46,870 was spent for installation, making a total of $108,220 for material and labor, which he claims they would be entitled to charge us, less a fair amount for any depreciation (he doubts there was any) for the materials taken out of stores.

Instead of charging us with this $108,220 they arbitrarily assessed us one-half of the total expense of installing four boilers, or $84,582. He says there is no logical reason for arbitrarily fixing this amount, but they doubted the propriety of charging us full value for the "in stores" equipment and felt the splitting of the total cost of installing the four was a method of adjustment entirely fair to us. He further stated that since these boilers were installed they had to buy additional boilers for other plants, so that they had not worked off against us anything that they did not expect to have later call for in some of their plants away from Deepwater.

Messrs. duPont and Harrington, however, admitted that there was some merit in our contention that by reason of this additional equipment they had at hand a reserve power to meet future requirements of their general business, and

expressed a willingness to make some allowance for it. The amount suggested by them will be mentioned later.

Research Expense

The total of this expense amounts to $216,394.09. Of this amount

$112,986.90 is charged direct to the chloride-process and $103,407.19 was originally charged to the bromide-process. We asked why the latter amount had been switched to the chloride-process plant, particularly as $65,824.of it covered expenditures prior to signing the chloride contract. They told us that their system of handling research expense was to allocate and charge off each month the full cost of all research to producing industries; but had not charged any lead research to dyestuffs or anything but lead; that they had a separate charge on research for lead and haven't charged any of it to anything else nor any other research to it; that as the bromine plant was the only one operating in 1924 they originally charged all of the lead research expense to that project although most of it was for account of the chloride-process; this was because the latter process had not yet become an industry; when they compiled their bill against us they took an arbitrary percentage of the total lead research and charged a portion of it to each, bromine and chloride, plant.

It may be mentioned that there was a monthly decrease in the percentage charged to bromine process and a corresponding increase charged to chloride process from and after January 1924. This, they stated, was due to the fact that the chloride process after January gradually became the predominant research issue; that inasmuch as the bromide-process was no longer of research importance, and the

chloride was to be substituted therefor, the research work became increasingly heavy on the latter.

They stated they did not feel that there was any way of justly determining the apportionment of this expense, other than the method they had employed. I felt that this was a subject beyond my ability to fix a proper division. I was, of course, not connected with the Ethyl enterprise at that time and have no information on the subject to justify my forming a fair conclusion. I feel that it is a matter that can best be handled on our part

by some one who knows more about the subject than I do.

However, I desire to call attention to the information in the previous discussions on prices, we agreed to $1.66 per pound because the duPont Company stated the original contract on the bromine process had resulted in aloss, partially due to heavy research. We accepted delivery of all lead that was tendered under the $1.66 price and were receiving $1.17 lead when the plant was shut down. The query naturally arises whether we were paying for this research in the $1.66 lead? Was it included in the price of $1.66? If so, then a certain percentage, if not all, of it has already been absorbed and we should not have to pay again. (Ido not remember this question being asked at the interview) This is a matter which should be taken up at the time hereinafter mentioned.

Changing the Riverside Club—$21,400.34

This was for converting a club into an eight family apartment for use by supervisors employed in the chloride plant.

At the interview they did not know if it was now being used by their other employees; what the rentals were, etc.

I told them that my idea of being "made whole" would be to appraise the actual loss incurred in connection with the change over of thisbuilding; if as a result of the close down the house will never be of any value, actual or potential, then we should pay whatever the expense involved in the alterations. But if by reason of the improvements they have a better house and can get higher rentals, etc. we were to be credited with such increase in value to the DuPont Company; that I did not see how we could assess the correct amount to charge us until something more definite had

had been ascertained as to the probable loss to the duPont Company by this expenditure of $21,400.34. Their idea of adjustment will be later referred to.

Comfort Station

I believe they will concede that this station has some value to their company, even if the lead plant should never be used. We did not get the opportunity to discuss this very fully.

Salvage or Conversion Value of the Plant

Mr. duPont says he will not consider the proposition of our having any financial interest in the plant; that this was thoroughly understood at the time the contract was made; that even assuming some of my statements are correct, to wit, that the plant cost $500,000 more than anticipated and that unforseen expenses were incurred in connection with poison troubles, etc. and which also were not possibly taken fully into consideration at the time the contract was made, that nevertheless, if the contract had not been cancelled by us they would have at least got out of it what they are now asking of us: that at the time of the shut down they had 8

autoclaves in operation and expected to have them all working by June; that with the added precautions employed they had no reason to apprehend further trouble, and that we are not justified in assuming that they would have had.

I stressed to my uttermost the point that I tried to make in my letter, to wit that by our paying the amount of their bill and having no interest in the salvage or conversion value of the plant, they were, in my opinion, getting more out of it than they would have if the contract had actually run its natural course to its termination. I based this argument on the

increased cost of the plant, the poison troubles, the heavy compensation liability and shut down expenses, none of which were apparently anticipated at the time of entering into the contract, and the small production at the time of shut down; and that the then production had been at a loss rather than a profit. Mr. duPont urged that it was unfair to attempt to assess their profits on a profit and loss basis during all the period up to the time of the shut down; that at the latter time they were going nicely; and even if their records showed a then loss on every pound made, (which he didn't admit) this was not a fair test by which to judge future production.

He also objected to our assumption that there would not be the profit they claimed; he insisted that inasmuch as we broke the contract, we were not entitled to as favorable a presumption as they were; that the presumption is that if we had not interfered they would have performed the contract rather than that they would have fallen down.

Mr. Harrington asked me to name a sum which I thought would be fair to pay them (if not the entire bill) and they to keep the plant, as they would not consider our having any.

salvage or conversion interest in it. I told them I couldn't name a fixed sum at that time, as my orders were to pay a sum which would make them whole; that to do less than that would be unfair to them and contrary to the wishes of our Board; that to pay more than making them whole would also be unfair to us, unless it was understood and expected that we were not only to make them whole but also pay a profit. That upon their own statements they would have got no more if the contract had continued to its end, than they are now demanding from us. That of necessity there would have to be more or less guessing indulged in on my part if I stated an amount which I believed would make them whole; but that I had the feeling, founded

—7—

solely upon the known conditions above enumerated, that they would be entitled to less than their bill if they expected to keep the plant, how much that was I was not prepared to say at that time. They then stated that their idea of a fair adjustment would be to deduct $30,000 from the power item as representing potential value to them of this additional equipment and deduct $10,700.17 from the Riverside Club item as representing potential value to them of this property; they to have all the property, including the plant, free and clear of any rights on our part, excepting the right to have any payments made by us considered in fixing the future price for lead to be made at this plant. This suggestion on their part, they said, was in order to effect a settlement and was not due to any uncertainty about the charges for power and club conversion having been correctly charged originally.

Inasmuch as Mr. duPont was adamant in his position about salvage or conversion value of the plant, and stated that his position on the subject would remain unchanged no

matter how long I urged our contention, and realizing that there was no hope of he and I reaching an agreement, I told him that we might be stirring up trouble over a matter which may be of no particular importance after the decision of the Surgeon General; for if the decision is favorable and we make another contract with them this salvage problem will have answered itself, and therefore, suggested that it be left to await the decision of the Surgeon General's Committee; and that meanwhile we will not make any further payment; that if subsequent to the Committee's report we should decide not to make another lead contract we then attempt to agree upon the balance due from the standpoint of our having or not having any interest in the plant, with the understanding that we agree now upon the Power, Riverside Club and Research items. However, I told them I personally felt that our Board would be willing to let the entire subject go over until after the Committee's report.

—8—

This suggestion was not acceptable to Mr. duPont, who stated that there was no reason why the whole matter could not be disposed of at this time.

I told Mr. duPont I could not recommend the terms of adjustment mentioned by him; that unquestionably it was a matter about which men might differ; that there was no definite amount anybody could fix with any assurance of its reflecting the exact sum now due his company if anything; but I did not see the picture the way he did; that in view of our evident inability to agree after many discussions it would be best, in my opinion, to have the matter taken up at our next Board meeting; this, he said, was entirely satisfactory to him.

I have tried to correctly set forth the substance of the interview. Inasmuch as I have attempted to set forth in

writing, the views verbally presented by Mr. duPont and Mr. Harrington, and realizing this, with the keenest desire to do so, is not always done,it might be well to send a copy of this letter to Mr. duPont, so that he may correct my version if he sees fit, and in order that all parties may be fully appraised of what points may come up for discussion relative tothis contract adjustment at the Board Meeting. Kindly indicate if you concur in this suggestion.

I regret the length of this letter, but felt it was a matter warranting full treatment.

Very truly yours,

E. W. Webb.

EWW/dB

NOTE: Check mark is by hand; italics indicate handwriting.

Defendant's Exhibit (DP) No. 117 5909

Letterhead of
ETHYL GASOLINE CORPORATION
NEW YORK

March 30, 1926.

Mr. W. F. Harrington, General Manager,
Dyestuffs Department,
E. I. du Pont de Nemours & Company,
Wilmington, Del.

Dear Mr. Harrington:

I wrote you the enclosed letter late yesterday afternoon in the hope I would be able to get it off to you, but the attorneys were unable to finish their suggestions on the contract until today.

Confirming this mornings telephone conversation, Mr. (?) Webb wired from Saginaw that he has closed a contract with the Dow Chemical Company for our requirements of Ethyl Chloride. He suggests that a clause be included in the lead contract which we are negotiating with you to the effect that before you make any other commitments for Ethyl Chloride, you first undertake to inform us the price of such expected commitment and all Ethyl Chloride purchased shall be at the price so advised, unless we elect to supply it on better terms, in which case the du Pont Company agrees to purchase it from us or our nominee. As I see it, he is probably pretty well agreed with Dow on price and he doesn't want you to have the right to make further commitments with anyone else until we have had a chance to meet the price of bids from other parties. We hope you are agreeable to such a clause.

Unless you hear from me to the contrary, we expect to be in your office early tomorrow afternoon to go over all contracts that are pending between us.

Yours very truly,

A. E. Mittnacht

AEM/ES

NOTE: Through the address, salutation and first paragraph appears a large check mark; at far right is stamped "Noted Apr. 1, 1926 WFH"; marginal notation is by hand; at lower right is written "GMC 1628"; italics indicate handwriting.

Defendant's Exhibit (DP) No. 118

Letterhead of

(DU PONT)
Reg. U. S. Pat. Off.
Established 1802

E. I. du PONT de NEMOURS & COMPANY
Incorporated

Organic Chemicals Department
Wilmington, Delaware

September 29, 1933.

Ethyl Gasoline Corporation,
Chrysler Building,
New York, N. Y.

Gentlemen:

In accordance with my conversation with Mr. Mittnacht of today, I understand that you desire to have us proceed promptly with the installation of an additional unit for the manufacture of Tetraethyl Lead at the Dye Works, which will increase the rate of capacity from 36,000,000 pounds to 48,000,000 pounds per annum. I understand also that you are willing to make the necessary modifications in our existing contract, dated August 18th, 1933, to make it consistent with this increased capacity. We believe that the necessary changes would consist of the modification of only two paragraphs, namely, paragraphs 3 and 10 in the existing agreement.

(1). Paragraph 3 — This would require insertion of the following between the second and third sentences:

"Provided that as and when an additional unit for the manufacture of Tetraethyl Lead now contemplated

by the parties hereto shall be installed and placed in operation at du Pont's Deepwater Plant and from and after the first day of the first calendar month during which 500,000 pounds or more of Tetraethyl Lead shall be manufactured in said unit, the price shall be reduced to 34¢ a pound, if between such date and December 31, 1934, Ethyl shall purchase Tetraethyl Lead at an annual rate of 42,000,000 pounds. Adjustment to said price of 34¢ in such event shall be made in the form of a rebate of 1¢ per pound to be credited on the December bill if, as of the end of the year 1934, the above conditions have been fulfilled."

(2). Paragraph 10 — We believe that this paragraph can be satisfactorily amended by striking out the first seven words in line five of this paragraph, which read:

"—as of the date of execution hereof".

If these modifications are satisfactory to you, will you please so certify by signing and returning one copy of this letter, by which

the above modifications will be understood to be incorporated in and become part of the contract of August 18th, 1933. Upon receipt of such acknowledgment we will pro-

ceed immediately to obtain authority for the installation of the additional capacity.

Very truly yours,

E. G. Robinson,
General Manager.

EGR:EM
esn

Accepted:
ETHYL GASOLINE CORPORATION

Graham Edgar
Vice President

NOTE: Italics indicate handwriting.

Defendant's Exhibit (DP) No. 119

5914

DU PONT SALES VOLUME OF TETRAETHYL LEAD
AND AVERAGE PRICE PER POUND FOR YEARS
1926 THROUGH 1937
(In Thousands of Pounds)

1926	657	$ 1.433
1927	1,769	1.276
1928	3,400	1.030
1929	7,999	.830
1930	17,037	.607
1931	15,432	.559
1932	9,935	.478
1933	24,033	.370
1934	35,665	.342
1935	44,243	.314
1936	52,998	.274
1937	62,492	.264

Sources: Govt. Trial Exh. 774
Organic Chemicals Department Records

3639

E

February 25th, 1926.

Mr. E. W. Webb, President,
Ethyl Gasoline Corporation,
25 Broadway,
New York, N. Y.

Dear Mr. Webb:—

I have carefully considered the proposition as to the price of Tetraethyl Lead to be delivered in 1927, and find myself unable to go below the $1.00 per pound figure. The risks are of such an uncertain character that after reducing the price from $1.04 to $1.00, I cannot see my way clear to go any farther without more experience of successful performance back of us.

Obviously we cannot expect to reach the cost upon which our price of $1.00 is predicated until late in 1926. I think you can readily see, under these circumstances, the wisdom of my position in feeling that I have gone to the limit of safety to myself and the Company which I represent in making the reduction from $1.04 to $1.00 per pound, to which I have already agreed. You understand that the $1.00 price assumes the basis of settlement discussed orally with you on Tuesday, and that we will be able to satisfactorily settle the conditions of the contract, also orally discussed, such as cancellation features and reduced production conditions.

Very truly yours,

W. F. Harrington,
General Manager.

Note: "FILE COPY" is printed across page.

Defendant's Exhibit (DP) No. 122

5916

TETRAETHYL LEAD

THE DISTRIBUTION OF PROFITS

(In thousands of dollars)

Year	Ethyl Profit (A) (Col. 1)	du Pont Profit (B) (C) (Col. 2)	du Pont Profit as % of Col. 1 Plus Col. 2 (Col. 3)
1924	$ (64)	$ (289)	
1925	(1,356)	357	
1926	(1,212)	(14)	
1927	(99)	771	
1928	1,625	1,385	46.0%
1929	6,168	3,654	37.2
1930	8,188	4,613	36.0
1931	9,013	4,695	34.3
1932	4,533	1,784	28.2
1933	7,246	3,472	32.4
1934	10,520	4,628	30.6
1935	10,446	5,519	34.6
1936	11,579	4,882	29.7
1937	13,787	5,262	27.6
1938	14,898	4,783	24.3
1939	23,255	5,534	19.2
1940	32,297	6,902	17.6
1941	34,985	6,509	15.7
1942	16,854	3,942	19.0
1943	20,148	3,918	16.3
1944	22,339	3,853	14.7
1945	21,882	3,800	14.8
1946	14,652	3,948	21.2
1947	16,012	2,784	14.8
Total	$ 297,696	$ 86,692	22.5%

(A) Profit after royalty paid to General Motors but before taxes and bonus.

(B) Profit before taxes and bonus.

3641

(C) Does not include profits attributable to materials used in production of tetraethyl lead or ethyl fluid.

5917

TETRAETHYL LEAD

THE DISTRIBUTION OF PROFITS (Continued)

PRODUCTION PURSUANT TO THE MANUFACTURING SERVICE AGREEMENT (Jan. 1, 1938-Dec. 31, 1947)

(MILLIONS OF POUNDS)

Year	Production as to which du Pont received one-third of the profits	Production as to which du Pont received one-tenth of the profits
1938	53.0	24.8
1939	53.0	37.2
1940	53.0	95.2
1941	53.0	97.7
1942	53.0	94.0
1943	53.0	133.5
1944	53.0	188.8
1945	53.0	170.8
1946	53.0	92.1
1947	53.0	144.6

Source: Organic Chemicals Department

3642

Defendant's Exhibit (DP) No. 123

DU PONT

ESTABLISHED 1802

E I DU PONT DE NEMOURS & COMPANY
INCORPORATED
ORGANIC CHEMICALS DEPARTMENT
WILMINGTON, DELAWARE

5918

Mr. A. E. Mittnacht, Secretary & Treasurer,
Ethyl Gasoline Corporation,
Chrysler Building,
New York, N.Y.

My dear Mr. Mittnacht:

Following our conversation in Wilmington last week, we have studied the basis of our agreement under which we agreed to make a price reduction to you on Tetraethyl Lead if it should prove that you would buy at the rate of 42,000,000 pounds per annum after the "E" Plant was completed and put into operation. This proviso was covered by our letter to you of September 29, 1933.

We are agreeable to interpreting this proviso so as to make the price of 5¢ a pound referred to in said proviso, effective from and after June 1, 1934 and until December 31, 1934, even though we may not operate the additional unit for the manufacture of Tetraethyl Lead, which is now being completed; provided that between June 1, 1934 and December 31, 1934, you shall purchase Tetraethyl Lead from us at not less than the rate of 42,000,000 pounds per annum.

Adjustment to said price of 5¢ per pound in such event shall be made in the form of a rebate of 1¢ per pound to be credited on the December bill if, as of the end of the year 1934, the above conditions have been fulfilled.

If this is satisfactory will you please sign and return the attached copy of this letter.

Very truly yours,

E. G. ROBINSON,
GENERAL MANAGER.

ACCEPTED:

ETHYL GASOLINE CORPORATION.

By A. E. Mittnacht

Secretary & Treasurer

3643

EGR:EM

145

E

Defendant's Exhibit (DP) No. 124

5011)

CC—Mr. T. M. Nichols
Mr. J. E. Kupperian

E. I. du Pont de Nemours & Company
(Incorporated)
Organic Chemicals Department
Wilmington, Delaware

November 2, 1934

Mr. A. E. Mittnacht, Secretary & Treasurer,
Ethyl Gasoline Corporation,
Chrysler Building,
New York, N. Y.

Dear Mr. Mittnacht:

I am enclosing herewith our regular monthly invoice covering sales to you or tetraethyl lead, dyes, service, etc., for the month of October.

You will note that on this invoice tetraethyl lead has been billed at 32c instead of 34c, which is the price that has been in effect. We have made this reduction in accordance with our desire to make our prices of lead to you commensurate with costs of manufacture. As a result of the progress which we have made in the manufacturing operation and the quantities which you have taken, it seems to us after consideration of our figures, that this reduction is justified and accordingly we have the pleasure of making it effective as of the first of October.

It is our expectation that we will bill you on the same basis for the months of November and December as well.

Very truly yours,

E. G. ROBINSON,
General Manager.

EGR EM

E

3644

Defendant's Exhibit (DP) No. 125 5920

EXCERPT FROM MINUTES OF MEETING #1285
OF EXECUTIVE COMMITTEE,

E. I. DU PONT DE NEMOURS & COMPANY,

HELD IN WILMINGTON, DELAWARE,
ON NOVEMBER 6, 1935.

* * * * *

* * * * * * * * * *

MODIFICATION OF TETRAETHYL LEAD CONTRACT:

The following resolution was offered and after discussion was unanimously adopted:—

RESOLVED, that the informal action heretofore taken taken by this Committee in authorizing the Organic Chemicals Department to modify the existing contract with Ethyl Gasoline Corporation by reducing the price of Tetraethyl Lead to 28¢ a pound, effective as of October 1, 1935, be and it is hereby approved, ratified and confirmed.

* * * * * * * * * *

I hereby certify that the foregoing is a true excerpt from minutes of meeting #1285 of the Executive Committee, E. I. du Pont de Nemours & company, held in Wilmington, Delaware, on November 6, 1935.

F. G. HESS (Stamp)
SEC'Y, EXECUTIVE COMMITTEE
E. I. DU PONT DE NEMOURS & COMPANY

January 3, 1949

3645

ETHYL GASOLINE CORPORATION
CHRYSLER BUILDING
405 LEXINGTON AVENUE

NEW YORK July 3, 1936.

MR. CESARE PROTTO, Asst. General Manager,
Organic Chemicals Department,
E. I. duPont de Nemours & Company,
Wilmington, Delaware.

Dear Mr. Protto:

We very much appreciate the contents of your letter of the 2nd instant regarding the reduction of the blending charge from 19¢ a hundred pounds to 11¢ for bulk material, the drum charge of 50¢ being unchanged.

I consider your letter and this acknowledgment to be entirely sufficient for our respective records and that it will be u..necessary to rewrite the present agreement.

Again thanking you, I am,

Very truly yours,

E. W. Webb

A:H

NOTE: At lower right is written "GMC-1014d"; italics indicate handwriting.

Defendant's Exhibit (DP) No. 128

E. I. DU PONT DE NEMOURS & COMPANY
(INCORPORATED)

DYESTUFFS DEPARTMENT
JACKSON LABORATORY
P. O. BOX. 525. WILMINGTON, DELAWARE

5922

April 14, 1930

OUR FILE JF-30-60

DR. H. W. ELLEY, DIRECTOR,

CHEMICAL SECTION.

F-12 - DIFLUORO-DICHLOROMETHANE
F-21 - FLUORODICHLORO METHANE

Attached find memorandum which we have drawn up covering a proposed process for the production of the above two fluorine derivatives.

This memorandum is being written at the present time in order to place on record, outside of our laboratory notebooks, a clear statement of the work which we are doing. If you compare this memorandum with the application for Part No. 1 of the project for difluoro-dichloromethane (J-30-60), you will notice that our line of attack has completely changed since we began on this work. The method outlined in the above mentioned preliminary statement before beginning our work was identical with the method now being carried out on a semi-commercial scale by the Frigidaire Corporation. Soon after beginning our work we became aware of the disadvantages in the original Swarts method as now being carried out by the Frigidaire Corporation, and therefore sought to develop another method of attack which would overcome the difficulties incident to the Swarts method. The attached memorandum sets forth in general terms our present ideas of a process for manufacturing the desired fluorine derivatives. We may find that this process must be altered considerably before our experimental work is completed, but up to date we have carried out no experiments which indicate that the process in general is other than practical.

JACKSON LABORATORY

LCH:F

LC-1A-1

3647

PROCESS FOR MANUFACTURING FLUORINE DERIVATIVES OF METHANE

5923

Fred Swarts, a Belgian chemist, has shown in a series of communications in the Bull. Acad. roy. Belgique that chlorine can be replaced by fluorine from carbon tetrachloride and chloroform by the action of antimony trifluoride in the presence of bromine, which produces some pentavalent antimony. As the replacement does not take place in the absence of the pentavalent form of antimony it is the natural conclusion that the active fluorine is itself in the pentavalent compound as perhaps SbF_3Br_2.

By the use of his reagent Swarts prepared $CFCl_3$ from carbon tetrachloride and $CHFCl_2$ from chloroform. It is fluorine derivatives of this type that are of particular interest to us. Swarts did not prepare higher fluorine derivatives of methane by further replacement of Cl from carbon tetrachloride but he shows that in certain ethane derivatives it is possible to replace two bromines attached to one carbon by fluorine with ease but that the replacement of more bromine takes place only with difficulty. From this it appears very probable that more of the chlorine of carbon tetrachloride or of chloroform can be replaced to give at least difluoroderivatives.

Swarts prepared the SbF_3 which he used by dissolving Sb_2O_3 in aqueous HF, evaporating to dryness, drying the product and then subliming it. It is necessary to have a completely water-free product; otherwise undesired oxygen containing products will result.

Otto Ruff, of the University of Breslau, has shown that antimony pentafluoride SbF_5 can be made from the pentachloride by careful treatment with a large excess of anhydrous HF.

We have now devised a process for producing fluorine derivatives which, while it makes use of the reaction of Swarts between pentavalent antimony compounds containing fluorine and methane chlorine derivatives, combines this with the observation of Ruff in a novel and practical way. We believe this proposed process has patentable features.

We propose to start with $SbCl_3$ and convert this to $SbCl_5$ by means of chlorine. This is liquid at ordinary temperature. The next step is the replacement of a portion of the chlorine from the $SbCl_5$ as hydrogen chloride by means of substantially anhydrous hydrogen fluoride. This can be done in a number of ways. We may mix the desired amount of liquid hydrogen fluoride with $SbCl_5$ at a temperature of about 0°C. which is below the boiling point of anhydrous HF. The evolution of HCl will begin at once. After standing a number of hours the reaction mass is gradually warmed to about 60°C. Additional HCl will be evolved along with some HF. The mass is now ready for fluorination of carbon tetrachloride or chloroform. The mixture of antimony chloride and fluoride thus prepared is solid at ordinary temperatures.

Efforts were made to bubble gaseous HF thru $SbCl_5$ at various temperatures but difficulty was encountered in the stoppage of the inlet tube due to the formation of solid products. It was then found that in the presence of CCl_4 the reaction mass remained liquid. Our preferred method of carrying out the process is as follows.

3648

In a suitable reactor of copper or other HF resisting metal, a charge of $SbCl_5$ is placed. This is warmed to about 50-60°C. and a stream of anhydrous, gaseous HF is bubbled directly into the $SbCl_5$ thru a suitable inlet tube. The evolution of HCl replaced by the HF begins at once. The addition of CCl_4 is begun at the same time as the flow of HF is started. The amount of CCl_4 to be added will depend upon the product desired. If the replacement of one chlorine only to form $CFCl_3$ is desired, an excess of CCl_4 can be used without harm but if the product wanted is CF_2Cl_2 a deficiency of CCl_4 should be employed in order to have an excess of fluoride present to encourage the removal of the second chlorine. Our work has not yet progressed to the point where we can give exact charge figures but the general principle to be followed is clear from the above.

The CCl_4 will react promptly with the fluorinated $SbCl_5$ and particularly if a deficiency of CCl_4 has been used a mixture of fluorinated derivatives will be formed. In case CF_2Cl_2 is the desired product the reaction is run under a reflux condenser kept at a temperature of -10 to -15°C. As CCl_4 boils at 77°C. and $CFCl_3$ at 8°C., the greater part of these carried up with the HCl and CF_2Cl_2 (B.P. -29°C.) gases will be returned to the reaction mass for further fluorination.

The gas escaping from the cold reflux will consist of a mixture of HCl, CF_2Cl_2, CF_3Cl, saturated at the temperature of the condenser with CCl_4 and $CFCl_3$ and carrying some HF. If much HF is present it may prove to be desirable to run these gases thru a second $SbCl_5$ reactor. Any number of such reactors can be placed in series till the HF content of the escaping gas is reduced to an economic limit.

The final gas emerging from the reactor or series of reactors is passed into alkali, preferably milk of lime altho the more expensive caustic soda may be used if desired but not soda ash. This alkaline treatment removes the uncondensable portio of the gas which is HCl, together with any phosgene ($COCl_2$) or fluorine analogue which may be produced as a result of moisture coming into the system. A scrubbing with water might be used to remove all but the last traces of HCl but it may be difficult to find apparatus in which this water treatment can t ke place.

The neutral gas emerging from the alkaline scrubbers is dried, condensed by well known means and subjected to fractional distillation. If $CFCl_2$ is the desired product the CCl_4 and $CFCl_3$ recovered from the distillation step are returned to the process.

Our information is not yet sufficiently complete to give definite charge and yield data but every step in the proposed process except the final distillation has been tested out qualitatively and proven to work, therefore the process has been reduced to practice.

By the same method other fluorinations such as the conversion of chloroform to $CHFCl_2$, or probably the conversion of CH_2ClCH_2Cl, ethylene dichloride to CH_2FCH_2Cl or to CH_2FCH_2F, will be possible.

The advantages of this proposed processare as follows:

1. It avoids the use of all water in every step except in the alkali scrubbers, and therefore corrosion will be a minimum.
2. It uses the antimony continuously as a fluorinating catalyst and therefore eliminates all recovery and reworking of antimony.
3. It operates at atmospheric pressure.
4. The highest temperature in the system is about 50°C. again favoring low corrosion.

R C Hall

Note: Dr. Chambers, underlined, is written in the upper left hand corner. K.C.-7, underlined, appears in the upper right hand corner. Illegible handwriting appears in left hand margin.

Defendant's Exhibit (DP) No. 129

5925

May 6, 1930

Mr. E. G. Robinson, Manager,
Dye Division,
E. I. du Pont de Nemours & Co.,
Wilmington, Dela.

Dear Mr. Robinson:

I just wanted to drop you a line to say I was mighty happy to meet you and all of your associates, and I feel we are well on our way to getting the new refrigorant matter on a basis where it will be mutually advantageous to all concerned.

Everybody here in Dayton is happy you will send an operator to take over our present semi-works plant. The sooner the better, and I will be happy to know who the man is and when he will be here, because we will receive him with open arms.

Yours very truly,

E. G. Biechler
President and General
Manager

EGB/CL

CC Messrs. Pratt, Midgley, Williams, Fordham.

NOTE: Ace-Frigidaire-Prod Sup & Nat. Gas—F-12-R is handwritten across the top of the document. An illegible stamp with a handwritten check appears in the upper right hand corner. A handwritten check appears above the name "Pratt." Italics indicate handwriting.

B

3650

Defendant's Exhibit (DP) No. 130



400 ROOMS - 400 BATHS
CIRCULATING ICE WATER

5926

HOTEL PONCE
DAYTONA

Aug 3, 1930.

E. S. Robinson
General Manager
Dear Mr. Robinson.

Immediately on my return to Dayton July 31st, as you suggested I discussed the results of our Washington Conference in detail with Mr. H. M. Williams.

After this discussion, Mr Williams said that he would call a meeting of those concerned and endeavor immediately to let you have a schedule of their present and future demands for both F-12 and F-21.

It was also decided that in c

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5927



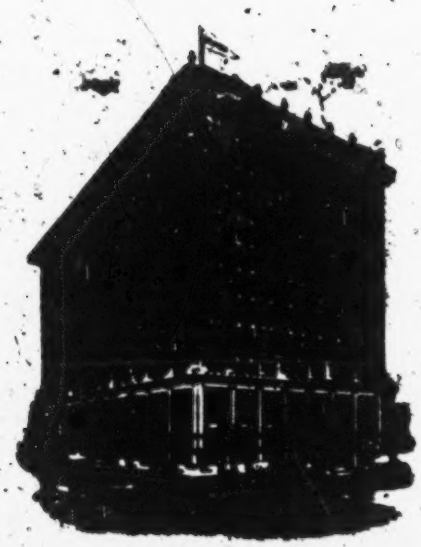


would keep our expenditures down to a minimum, and endeavor to meet this present requirements with the equipment now on hand.

I feel that I have convinced Mr. Williams that a plant erected here and based on this process, for the production of 3000# per day would be highly impractical.

In fact he made the statement that they were not chemical manufacturers and that he would be glad when Du Pont could relieve him of needs.

We are proceeding with what equipment we have to get all the information and maximum production possible. This production is over



400 ROOMS - 400 BATHS
CIRCULATING ICE WATER

5928

HOTEL ROBERT
DAYTONA

Replied letters 1-12 and 1-21.
Will produce about 50 lbs of 1-21 and 30 lbs of 1-12 per day.

Should any change in our present procedure arise I will advise you at once.

Yours very truly

Robt G. Lewis

NOTE: In upper right hand margin appears illegible handwritten notations.

3653

Defendant's Exhibit (DP) No. 131

5929

EXCERPTS
FROM
ANNUAL REPORT
1931
KINETIC CHEMICALS INC.

• • • • •

F-12 YEARLY REPORT

The manufacture of F-12 originated from the desire of the Frigidaire Corporation to equip their electrical refrigerating units with a more desirable refrigerant than SO2. In July, 1928, active research was started on this problem in Dayton, and certain fluorine compounds, difluoro dichloro methane (F-12) and mono fluoro di chloro methane (F-21) were prepared in the laboratory. Samples of these two products tested for toxicity, inflammability, corrosion, etc., indicated that they far surpassed any known refrigerant and that di chloro difluoro methane, in particular, approximated the properties of the "ideal" refrigerant. A plant for the manufacture of these products was erected and started operating in Dayton in October, 1929. The process consisted of treating antimony trifluoride with carbontetrachloride (or chloroform) in the presence of a catalyst—antimony pentachloride. The reaction was a batch process, carried out in an autoclave. In June, 1930, a still with a packed column, brine condenser and separate receivers was installed and with certain other changes in operating conditions, the Dayton Plant was brought up to a capacity of about 5,000 lbs. per month of F-12 or F-21. In a plant of this size and with the process used, the cost

of the product was prohibitive—being in the neighborhood of $2.50 a pound.

In the early part of 1930, research work was started in the Jackson Laboratory on methods of manufacturing these products and a continuous process developed involving the use of anhydrous hydrofluoric acid. This product was vaporized and passed into a catalyst simultaneously with carbon tetrachloride, in molecular ratio. The catalyst was prepared by chlorinating antimony trichloride to antimony pentachloride and then passing in hydrofluoric acid gas until the fluorine content of the catalyst approximates 10-14%. This corresponds to a mixture of $SbC14F$ and $SbC1_3F_2$, which is an excellent catalyst. (If the catalyst were entirely SbCL4F, the fluorine content would be 6.8% —if it were $SbC1_3F_2$ the fluorine content would be 14.4%). The continuous process developed at the Jackson Laboratory was considered sufficiently satisfactory and so superior to the Dayton process to warrant the erection of a plant at the Dye Works to manufacture F-12. This plant was designed to produce 3,000 lbs. of F-12 per day, though the transposition of the process from a laboratory to a plant scale rendered this figure uncertain. The erection of the plant was started in October, 1930, and completed in December, 1930.

* * * * *

Defendant's Exhibit (DP) No. 132

5931

OUTLINE OF ORGANIZATION AND OPERATION OF PROPOSED FLUOROCARBON PRODUCTS CORPORATION

The following paragraphs embody an outline of the purpose, structure and operation of the proposed new company to be organized by the General Motors Corporation and E. I. du Pont de Nemours and Company for the immediate purpose of manufacturing and marketing certain chemicals useful as refrigerants.

NAME OF COMPANY—A company name compounded from the names of the parent corporations might, in this case, prove rather lengthy, awkward and cumbersome. It would therefore seem advisable to select a corporation name which has no relationship to either General Motors or Du Pont.

There are objections to such a name as "Fluorine Chemical Company" or "Fluorine Products Corporation" because they might imply too extensive an activity in the manufacture and sale of derivatives of fluorine, for example, hydrofluoric acid, and thus invite annoying and undesirable inquiries.

A coined term such as "Fluorocarbon Products Corporation" might, therefore, serve the purpose. For simplicity, the new corporation is referred to hereinafter as "Fluorine."

PURPOSE—The corporate purpose of the company, as should be set forth in its charter, shall be the manufacture, use and/or sale of halogenated methane or ethane in which at least one hydrogen atom is substituted by a fluorine atom. Assuming the company is incorporated in Delaware, which

is desirable from many standpoints, there appears to be no particular object in having the charter either very broad or very narrow because, in the first place, the activities of the company will doubtless be confined to a definite field by contract agreement between General Motors and Du Pont and by the actions and policies of the Board of Directors and, in the second, the charter can easily be expanded within a few days' time if it is considered necessary or advisable to enlarge the company's functions.

However, the primary and immediate purpose of the corporation shall be to manufacture and sell the said chemicals for use as refrigerants. In other respects, the corporation should be chartered to acquire and dispose of property and engage in chemical and marketing research of whatever nature is connected with the manufacture, use and/or sale of its chemicals. It should also be authorized to engage in building construction and engineering projects and to employ whatever class of labor necessary for these various purposes.

The usual form employed by the Du Pont Legal Department will unquestionably cover the remaining charter requirements of the new company such as negotiating loans, investing in government or other securities, etc.

CAPITAL STRUCTURE—As already tentatively agreed to between officials of the General Motors Corporation and the Du Pont Company, each of these parent organizations should furnish 50% of the capital. It would seem, for the time being at least, that an authorized capital of $2,000,000, consisting of 20,000 shares of $100 par value each should prove entirely adequate until such a time as production and

3657

sales exceed five to seven million pounds annually. When fully subscribed, this would provide $1,400,000 for fixed investment in plant and $600,000 for working capital.

For such period as the production and sales do not exceed 1,000,000 pounds annually, it appears that the issuance of 3,000 shares of stock, providing a capital of $300,000, should be sufficient.

OFFICERS—The officers should consist of a President, Vice-President, Treasurer (who would be an Assistant Secretary), Secretary (who would be an Assistant Treasurer), and an Assitant Treasurer.

Since the corporation is being created to exploit a General Motors' development, it seems fitting that an officer of that firm should be elected President of Fluorine and thereafter that the offices should be filled alternately according to nominal authority from Du Pont and General Motors respectively. This will provide for a Du Pont executive to be Vice-President, for a Treasurer from General Motors and a Secretary from Du Pont. The

Assistant Treasurer could be selected from either Du Pont or General Motors, acording to availability.

The two active executive officers will doubtless be the Vice-President, who would probably perform the functions of a General Manager, and the Assistant Treasurer who could have general charge of accounting, purchasing, shipping and financial matters under the general supervision of the General Manager, but reporting to the Treasurer on purely financial affairs. While it is probable that the Assistant Treasurer could perform most of the work con-

nected with the purchasing of Fluorine's raw materials and other supplies, nevertheless, the Du Pont Purchasing Department stands ready to provide its services on important contracts at a cost of approximately 1% of the materials purchased. The duties, authority and responsibility of the Vice-President and General Manager are treated further under the subject of "Plant Management."

In order to have adequate diversification of representation of the various technical, financial and executive interests of both Du Pont and General Motors, it seems that the Board of Directors should consist of not less than six members, three from each of the parent corporations. Carrying out further the idea of diversification of representation on the Board of Directors, it would assist toward keeping it as small as possible yet at the same time maintaining its greatest breadth of knowledge and experience to provide that no more than two of the officers of the company shall at any time be members of the Board of Directors. This might readily result in the other two officers of the company being invited to sit in a purely advisory or informative capacity at the meetings of the Board.

SEMI-COMMERCIAL PLANT—It appears to have been accepted by both General Motors and Du Pont that the semi-commercial plant for testing the engineering and chemical principles of the process or processes eventually developed by research should be located on the Du Pont Dye Works' property at Deepwater Point, New Jersey. It should be constructed by the Du Pont Engineering Department, have a capacity of at least 600 pounds a day and be operated by members of the Du Pont Dyestuffs Department's staff preparatory to final development of the process considered

suitable for the large scale factory. All charges incurred by Du Pont in connection with the designing, construction and operation of the semi-commercial plant shall be paid for at cost by Fluorine pending the erection of its own factory and the establishment of its own operating organization.

PERMANENT PLANT LOCATION—Considerable discussion has already taken place concerning the location of the permanent factory. Nothing apparently can be added to the principle that the manufacturing operations should be placed where available supplies of raw materials and distribution of finished products make possible the greatest efficiency, provided, however, we constantly bear in mind the false economy of sacrificing proximity of our own broad chemical manufacturing experience for the sake of saving a few thousand dollars annually, on raw materials' or finished products' freight charges, by locating where we made frequent consultation impossible or at least difficult during the formative years of the business.

PLANT MANAGEMENT — It is apparent that at least the nucleus of the plant management staff should be furnished by Du Pont because the nature of the General Motors' operations is not such as to develop junior executives capable of operating chemical factories.

At the inception of operations it will therefore be necessary for Du Pont to furnish the senior plant officer, who would be the Superintendent and at least two supervisors, all of whom should be capable of development for more responsible positions as the corporation grew. The remainder of the staff, such as analytical chemists, plant

operators, etc., could be built up by a few transfers and new engagements. Common labor would, of course, be drawn from the local plant source.

Inasmuch as it is recognized that there is considerable advantage of having, in the establishment of a new enterprise involving, as this one does, rather complex chemical processes, the benefit of broad development and manufacturing experience such as is possessed by the Dyestuffs Department's organization, it is advisable to have the factory of the new company operate under the cooperative technical assistance which Du Pont is qualified and

equipped to render. For its services, during the five years beginning with the designing of the commercial scale factory, in furnishing, as occasion requires, such knowledge, information and professional services of its employes as are necessary to solve the problems encountered in the successful operation of Fluorine's factory, Fluorine shall pay Du Pont a management fee of $50,000 a year. This fee represents approximately 1.7¢ per pound on a production of 3,000,000 pounds annually and 1¢ per pound on a production of 5,000,000 pounds a year.

To provide for proper delegation of authority and responsibility by the Board of Directors and officers of Fluorine and to accomplish the most efficient and economical operation of the factory, it would seem advisable to designate the Du Pont executive who is elected Vice-President of Fluorine and who would simultaneously be an official of the Du Pont Dyestuffs Department, to have general charge of the factory operations and to whom the factory superintendent would report. The authority and responsibility thus vested in the Vice-President and the

knowledge and experience of the plant superintendent, who shall have been trained in the Du Pont Dyestuffs organization, would pave the way for simple and efficient cooperation between the staff of the Fluorine factory and the research and manufacturing organization of the Dyestuffs Department.

FRIGIDAIRE AND G. M. PATENTS—Frigidaire, including all subsidiaries or associated companies of the General Motors Corporation, shall grant licenses to Fluorine under all applications and/or patents, covering halogenated methane or ethane in which at least one hydrogen atom is substituted by a fluorine atom, such compounds hereinafter being referred to as "products", which are useful as refrigerants or for other purposes later deemed within the province of Fluorine, according to the following terms and conditions:

1—Such licenses shall be exclusive to Fluorine, Frigidaire retaining no manufacturing or sales rights but only the right to use for the purposes claimed. These licenses shall also

be non-transferrable excepting with the entire assets of Fluorine.

2—These licenses shall convey to Fluorine the right to manufacture, use and/or sell the products claimed and, further, the right to grant written or implied sub-licenses to its customers to use the products purchased by them.

3—Beginning with the free and unrestricted sales of the licensed products to consumers, other than Frigidaire, Fluorine shall pay Frigidaire as a royalty, which shall constitute compensation under all patent licenses and for all patent licensed products, an amount equivalent to 20% of its profits remaining after a preferred

dividend of 10% is paid to General Motors and Du Pont on their respective investments in Fluorine.

4—Such payments of royalty shall be made quarterly within thirty days after the close of Fluorine's fiscal quarter year period.

5—Frigidaire shall prosecute at its own expense all patent applications under which it licenses Fluorine.

6—Should no patents issue to Frigidaire as a result of its applications within five years from the date on which Fluorine begins deliveries to Frigidaire of any product or products claimed under the latter's applications, then Fluorine's obligation to pay the aforesaid royalty shall cease with respect to such product or products until controlling patents do issue and, further, should the patent or patents covering any or all licensed products be held invalid or not infringed, then Fluorine shall also be relieved of the obligation to pay royalty on the products involved until such decision is reversed; provided nothing under this section shall be construed to relieve Fluorine of the obligation to pay royalties, as aforementioned, during that portion of the five year period in which it delivers to customers other than Frigidaire, as adequate and final compensation to Frigidaire

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for granting whatever rights and opportunities it may possess in this field.

7—Frigidaire shall be under no obligation to prosecute alleged infringers of the Frigidaire patents under which Fluorine is licensed, but shall grant Fluorine power of attorney to bring suit under the said patents, at the same time reserving the right to join, at its own expense, with

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Fluorine in such suits and to share in the recoveries in the direct proportion that the expenses contributed by Frigidaire bear to the total.

DU PONT PATENTS—Du Pont shall grant to Fluorine exclusive licenses, excepting as hereinafter provided, that are non-transferrable excepting with the entire assets of Fluorine, under all its patent applications and/or patents claiming the said products, or processes for their manufacture, and for the said product purposes, according to the following conditions:

1—Such licenses shall be exclusive to Fluorine insofar as the products or processes claimed therein may be utilized for the purposes of Fluorine, du Pont retaining all other rights thereunder.

2—Fluorine shall pay du Pont as a royalty, in compensation for its research and development expense, 5% of the net selling price of the products under which it is licensed provided, however, that if no patents are issued to Du Pont within two years after Fluorine begins deliveries of the licensed products to Frigidaire or other consumers, Fluorine shall thereafter be relieved of the obligation to pay a royalty on any of the said products not covered by patents but its obligation shall resume upon the subsequent issuance of any patent or patents to Du Pont claiming the said products but such obligation shall apply only to the products covered by said patents, all others being free of the liability to pay royalty.

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3—Such payments of royalty shall be made quarterly within thirty days after the close of Fluorine's fiscal quarter period.

4—Du Pont shall prosecute at its own expense all patent applications under which it licenses Fluorine.

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5—Du Pont shall be under no obligation to prosecute alleged infringers of Du Pont patents under which Fluorine is licensed but shall grant Fluorine power of attorney to bring suit under its patents, at the same time reserving the right to join, at its own expense, with Flourine in such suits and to participate in any recoveries in the same proportion as it contributed to the total expense.

MIDGLEY PATENTS—It is difficult to suggest any basis of licensing or transferring whatever applications or patents to which Thomas Midgley, Jr. may lay claim through his private and personal researches because we are not acquainted with the nature of his obligation to either General Motors or Frigidaire on such matters. We know, of course, that he has certain ideas, possibly patentable, respecting uses for derivatives of fluorine for purposes other than refrigerants. On the assumption, however, that his inventions are assignable, under conditions with which Fluorine need not be concerned, to Frigidaire or General Motors, then the provisions already stated for the licensing of Frigidaire applications or patents can be followed in the case of the Midgley rights.

FOREIGN PATENTS—General Motors, Frigidaire, Du Pont and Fluorine shall apply for and endeavor to obtain patents corresponding to their United States applications in such foreign countries as is deemed necessary for the protection of their respective rights and especially those of Fluorine. Essentially the same arrangements as to licenses and the payments of royalties, prosecution and defense of suits shall prevail in all such foreign countries as exists in the United States. The owners of the various patents shall pay all fees and taxes required for the maintenance of foreign patents as well as for the cost of obtaining them.

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RESEARCH—Chemical research in this field would consist of two types, i.e., fundamental and applied. By fundamental is meant the creation of new chemicals, a study of their inherent properties and an investigation of efficient methods for their manufacture. By applied research is meant the adaptation of such new compounds to old or new and useful purposes. With the facilities now possessed by Du Pont and General Motors for conducting both fundamental and applied research, it would seem inadvisable for the new corporation to undertake such a program of research with all the duplication in investment and facilities that such a plan implies. It is therefore recommended that Du Pont and General Motors conduct the necessary research during at least the first few years of development, according to their existing facilities and under autnorized appropriations by the Fluorine Board of Directors.

SALES—The sales of Fluorine's products shall be conducted according to plans and policies to be formulated as occasion requires by the Board of Directors. In this connection it should be remembered that the du Pont Dyestuffs Department, by reason of its sales of sulfur dioxide to manufacturers of household and merchandising refrigerators of a type now charged with refrigerants other than ammonia and that the Du Pont Ammonia Company and/or the National Ammonia Company, as a result of their established position in supplying ammonia for power plant, hotel and other similar refrigerating installations, have accumulated valuable experience in marketing to consumers in these respective fields that could be utilized in selling the products of Fluorine.

Should it later be deemed advisable and logical for these organizations to sell the products of Fluorine, they should

receive a sales commission equivalent to 15% of the gross selling price of the products and for this compensation shall defray all expenses of developing and establishing sales, exclusive of advertising, provided, however, that neither of these sales agencies should be required for such compensation to conduct technical research for the development of information necessary to the marketing of the products, it being the obligation of Fluorine to furnish such technical data.

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ADVERTISING—Whatever advertising of Fluorine's products is deemed necessary in trade journals and by means of technical or popular pamphlets or other similar printed matter, exclusive of ordinary sales correspondence or circular letters, shall be provided for under appropriations authorized by the Board of Directors of Fluorine.

SELLING PRICES — It is perhaps a little premature to speculate as to the amount of the selling prices that should be quoted in view of the current indefinite information we have with respect to actual costs. However, a typical example of the method of arriving at a suitable price can be worked up for the product now known as F-12 and on the assumption that the production of even as much as 5,000,000 pounds a year would cost $.30 per pound at the factory.

Selecting arbitrarily a selling price of $.55 a pound, the selling expense charges at the rate of 15% would be 8.25¢ per pound. To this deduction must be added the other deductions for cash discount, packages and administrative costs which are roughly estimated at 3.55¢ per pound, making a total deduction of 11.8¢ or a net price to Fluorine of 43.2¢. The margin would then be 13.2¢ per pound on a pro-

duction of 5,000,000 pounds or a net of $662,000.00 before deducting for taxes, research and royalties to either Frigidaire or Du Pont.

We can estimate that if the research expenses run as high for the next few years as $5,000 a month it would leave about $600,000 annually to provide for taxes, royalties to Frigidaire and Du Pont, advertising, contingencies such as patent expense and litigation, and return on investment to General Motors and Du Pont. We do not know what the taxes would amount to because these would necessarily vary according to the State in which the plant is located but it appears that as long as the $.55 price was maintained Frigidaire would receive about $80,000 annually in royalties and that Du Pont and General Motors would obtain somewhat better than a 20% dividend on their respective investments of $1,000,000.00 each.

The price of $.55 per pound sounds high in comparison with present

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costs of refrigerants but its greatly superior properties will doubtless justify a greatly increased figure, especially since the amount used per machine is of little consequence in contrast with the total cost of the refrigerator. The prospects are, of course, that the cost on a volume of 5,000,000 pounds annually will be nearer $.15 than $.30, making it possible to bring the price of the refrigerant down to about $.40 per pound and still yield the same return on investment.

J. Warren Kinsman,
Director of Sales, Organic Chemicals

May 27, 1930

NOTE: In center of page 1 (approximately) appears a handwritten "X"; at top of page, on right hand side, appear illegible handwritten notations. In left-hand margin, in approximately the center of page, appears "K C-7-(illegible)"; A portion of the eighth and tenth lines from the bottom of the page are underscored (by hand) and the entire ninth line from bottom of page is underscored; opposite these lines, in left hand margin appear two vertical handwritten lines, to the left of which is written "1", enclosed by circle, and the letters "OK" in handwriting. On page two diagonal handwritten lines appear across lines 12, 13 and 14 from top of page. The 15th, 16th, 17th, 18th and 19th lines from top of page are underscored with handwritten lines, to the right of which (in right hand margin) appear handwritten notations "D.P.51%" and "G.M.49%", and to the left of which (in left hand margin) appear "5,000,000?" with line drawn through it and the handwritten notation "OK". The eighth and ninth lines from bottom of page are underscored by hand and notation "(illegible) all *Du Pont*" appears opposite these lines in left hand margin. In left hand margin of page three appears following handwritten notation: "3 DP 5 2 GM." Page five at end of first paragraph (8th line from top of page) appears handwritten notation as follows: "for 5 years, after build new organization." Page seven in lower left-hand margin appears an illegible handwritten note. Page eight in lower left-hand margin appears an illegible handwritten note. Page nine in lower left-hand margin appears the following handwritten notation: "no charge for sales to Frigidaire—" Page eleven handwritten signature of J. Warren Kinsman appears at end of document. Illegible handwritten notation appears at bottom left-hand margin of document.

Defendant's Exhibit (DP) No. 133

5945

AGREEMENT entered into on the 6 day of June 1945, between GENERAL MOTORS CORPORATION, a corporation of the State of Delaware, hereinafter referred to as GENERAL, and E. I. DU PONT DE NEMOURS & COMPANY, also a Delaware corporation, hereinafter referred to as DU PONT,

W I T N E S S E T H, That:

WHEREAS, DU PONT and GENERAL entered into an agreement under the date of August 27, 1930 providing for the formation of a new company (subsequently incorporated as Kinetic Chemicals, Inc.) for the manufacture of certain chemicals, and

WHEREAS, said agreement provides in Paragraph Seventh for the offer of future chemical developments originating in the laboratories of GENERAL or its subsidiaries to the new company, and

WHEREAS, the aforesaid provision of said Paragraph Seventh has not been and is unlikely to be operative and the parties hereto desire to eliminate that provision from Paragraph Seventh from said agreement;

NOW, THEREFORE, for and in consideration of the mutual undertaking hereinafter contained, the parties hereto agree as follows:

1. Effective as of the date of this agreement that portion of Paragraph Seventh of said agreement of August 27, 1930 reading as follows:

> "it being further agreed that future chemical developments, (other than those relating to 'said products') originating in the laboratories of General, or its subsidiaries, shall be offered by General to the New Company on such terms as may be mutually agreed upon, and if after six months the New Company shall elect not to exploit such new chemical developments, then General shall be free to dispose of the same elsewhere."

is cancelled in its entirety, it being understood and agreed that

the cancellation of that portion of said Paragraph Seventh shall not in any manner affect any other provision of said agreement as heretofore amended.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed by their officers, duly authorized, and their respective corporate seals to be hereunto affixed, on the day and year first above written.

GENERAL MOTORS CORPORATION

By _____
Vice President

ATTEST:

_____
Secretary

E. I. DU PONT DE NEMOURS & COMPANY

By _____
General Manager
Organic Chemicals Department

ATTEST:

_____
Secretary

KINETIC CHEMICALS INC., a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at Wilmington, Delaware, hereinafter referred to as KINETIC,

HEREBY ACKNOWLEDGES that it has read the above agreement of June 26, 1945, between GENERAL and DU PONT and has full

knowledge of its contents; and that it assents to the cancellation of that portion of Paragraph Seventh of the agreement of August 27, 1930, as provided in the aforesaid agreement of June 28, 1945.

IN WITNESS WHEREOF KINETIC has caused this instrument to be executed by its officers duly authorized and its corporate seal to be hereunto affixed as of the day and year first above written.

KINETIC CHEMICALS INC.

ATTEST:

BY C. O. Loch
President

Secretary

July 17, 1930.

TO : FINANCE COMMITTEE

FROM : EXECUTIVE COMMITTEE

PROPOSED NEW COMPANY FOR THE EXPLOITATION OF F-12:

Attached hereto please find copy of report from Mr. E. G. Robinson, General Manager, Dyestuffs Department, dated July 14, 1930 (#2882), on the above subject, enclosing copy of proposed agreement in connection therewith between General Motors Corporation and the duPont Company:

At meeting of the Executive Committee held yesterday, it was moved and unanimously carried that the report and enclosure be received and ordered filed, and that the Dyestuffs Department be advised that the Executive Committee approves the program in principle, subject to approval of the Finance Committee, with the understanding that the proposed agreement will be modified so as to clarify the meaning of certain paragraphs thereof in accordance with the views expressed at this meeting, and with the further understanding that the modified agreement will be presented to this Committee for final approval before execution.

This matter is now presented to your Committee for consideration and approval.

M. D. Fisher,
Sec'y Executive Committee.

29-enc.

July 14, 1930

TO : EXECUTIVE COMMITTEE
FROM : DYESTUFFS DEPARTMENT
PROPOSED NEW COMPANY FOR THE EXPLOITATION OF F-12

The Frigidaire Corporation have developed a series of chemical compounds which are apparently particularly fitted for use as refrigerant liquids. These compounds apparently possess a combination of physical and chemical properties which make them more suitable for this purpose than any of the refrigerants at present in use. The General Motors Corporation have proposed that on account of our experience in the manufacture of chemicals, they and we should form a company to exploit them.

We are attaching hereto draft of an agreement which covers the basis upon which it is proposed to form this new company. This draft is the result of our discussions with the General Motors representative and is now, we believe, in substantially its final form.

The plan, as you will observe from the agreement, contemplates the ultimate use of $2,000,000 of capital by the new company, to which the duPont Company would subscribe 51%, or $1,020,000. It is not possible at this time to give any estimates of the profit which it is expected this company will ultimately make, since this will depend primarily upon the cost of manufacture which can be realized and the value of these products as refrigerants which will be developed by the experimental work to be conducted by the Frigidaire Corporation. It is accordingly planned at this time to issue 10% of the proposed amount of stock involved, or a subscription of $102,000 from the duPont

Company and a corresponding amount from General Motors. This money will be used to reimburse the duPont Company for research work which they have already done for the new company, to build a semi-works plant in which the manufacture of the products can be studied, and in which sufficient material can be produced for the experimental program on its application and to provide for the cost of operating the semi-works plant. Before additional money is required by the new company, it is expected that sufficient information will have been developed to enable us to determine whether, before proceeding

further with the project, it is justified.

It might be stated that the General Motors people are all very enthusiastic in their belief that these compounds, on account of their properties, are destined to replace all other refrigerants in domestic refrigerating machines and probably to find other important commercial uses.

Your approval of this program is requested.

E. G. ROBINSON,
General Manager.

P.S.—The Exhibits A and B referred to in the agreement have not yet been drawn up but are to be made a part of the agreement before its final execution.

Moreover, the name given for the New Company in the agreement, namely, Du Pont-General Motors Chemicals, Inc., is not the name to be used but it is simply used in this draft until a more suitable name shall have been finally selected.

AGREEMENT entered into on the day of July, 1930, between General Motors Corporation, a corporation of the State of Delaware, hereinafter referred to as General, and E. I. du Pont de Nemours & Company, also a Delaware corporation, hereinafter referred to as du Pont.

WITNESSETH:

WHEREAS du Pont is extensively engaged in the business of manufacturing various chemicals, and among others, certain chemicals used in mechanical refrigeration, and

WHEREAS General, and its subsidiary, The Frigidaire Corporation, have developed certain chemicals containing Fluorine which the parties hereto believe will be useful as refrigerants, and

WHEREAS du Pont at the request of General has, prior to the date hereof, conducted various researches and experiments pertaining to the manufacture of such Fluorine compounds, and

WHEREAS the parties hereto desire to engage in the business of manufacturing and selling such Fluorine compounds and other chemicals in the manner and upon the terms and conditions hereinafter set forth,

NOW, THEREFORE, they have agreed and by these presents do agree with each other as follows:

First: The term "said products" as hereinafter referred to, to be manufactured by the New Company, as herein provided, shall be deemed and considered to mean Halogenated Methane or Ethane, in which at least one Hydrogen Atom is replaced by a Fluorine Atom, including the intermediates therefor.

Second: Promptly upon the execution hereof a corpora-

tion shall be formed under the laws of the State of Delaware, which corporation shall be named du Pont-General Motors Chemicals, Inc., and shall have a total authorized capital stock consisting of twenty thousand (20,000) shares, with a par value of One Hundred Dollars ($100.00) per share, such corporation being hereafter referred to as the New Company.

Third: Upon the organization of the New Company, du Pont shall subscribe for fifty one percent (51%) of said total authorized capital stock and General shall subscribe for forty nine percent (49%) thereof, which subscriptions shall be payable to the New Company from time to time at such

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times and in such amounts as the Board of Directors of the New Company shall determine.

Fourth: The New Company shall have such powers as shall be necessary and/or adequate to enable it to engage in the manufacture and sale of the "said products", and to carry out the purposes and intention of this agreement.

Fifth: The officers of the New Company shall be a President, one or more Vice-Presidents, Treasurer and Secretary, with such Assistants as the Board of Directors of the New Company may determine to be necessary or requisite.

Sixth: The Board of Directors of the New Company shall be composed of five members, and the parties to this agreement agree that they will cast their votes at all meetings for the election of such directors in such a manner that three of said directors will be representatives of du Pont and two of said directors will be representatives of General.

Seventh: As soon as the New Company has been organ-

ized and the first calls on the subscriptions of the parties hereto to its capital stock have been paid, the New Company shall engage in the manufacture and sale of the "said products"; it being understood and agreed that for the time being said New Company will operate the semi-commercial plant owned by The Frigidaire Corporation at Morain City, Ohio, which operation shall be carried on at the cost and expense of the New Company, and shall be continued for such time as the Board of Directors of the New Company shall determine; it being further agreed that future chemical developments originating in the laboratories of General, or its subsidiaries, shall be offered by General to the New Company on such terms as may be mutually agreed upon, and if after six months the New Company shall elect not to exploit such new chemical developments, then General shall be free to dispose of the same elsewhere.

Eighth: du Pont agrees that it will be responsible for the management of the New Company and will give to the New Company the benefit of its experience in the manufacture and sale of chemicals, for which service the New Company will pay to du Pont a fee of Fifty Thousand Dollars ($50,000.00) per year for a period of five years from the date of this agreement; it being understood and agreed, however, that if after one year from the date of this

agreement the net profits of the New Company shall be less than Fifty Thousand Dollars ($50,000.00) per year, then the fee payable for any such year shall not exceed the amount of such net profits.

Ninth: The services of du Pont to the New Company, referred to in the last preceding paragraph, shall be avail-

able only with respect to the production of "said products" referred to in Paragraph First of this agreement, and shall be provided upon the condition that the New Company shall pay the salaries of du Pont employees while temporarily engaged in such service for the New Company, and shall pay the travelling and living expenses of such employees, should their duties require them to travel in such service; it being agreed that the general administration offices of du Pont located in Wilmington shall make no charge for their time in administering the affairs of the New Company, and the New Company shall be liable only for the traveling and living expenses of employees of said offices while engaged in the service of the New Company.

Tenth: General shall cause its subsidiary, The Frigidaire Corporation, promptly upon the execution of this agreement to grant to the New Company an exclusive license (*subject to a license to be retained by Frigidaire for its regular refrigerators*) to manufacture, use and sell "said products" under all patents or applications for Letters Patent, whether issued or applied for, in the United States and/or foreign countries at the date hereof, or which may hereafter be issued or applied for in said United States or foreign countries by General or by the said The Frigidaire Corporation; it being understood that the obligation of said The Frigidaire Corporation under this paragraph shall extend to and include all patents and applications pertaining to the "said products," in so far as said The Frigidaire Corporation shall have a right to dispose of the same, subject, however, to any rights heretofore granted to the Ethyl Gasoline Corporation; it being further understood and agreed that said license shall be substantially in the form attached hereto, made a part hereof and marked Exhibit "A".

Eleventh: Du Pont shall transfer and assign to the New Company all processes and patents now or hereafter owned by du Pont pertaining to the manufacture of the "said products", and arising out of information received from General or The Frigidaire Corporation, which assignment shall be substantially in the form attached hereto, made a part hereof and marked Exhibit "B".

Twelfth: It is agreed that the transfer to the New Company of the processes, patents and patent rights of The Frigidaire Corporation, hereinabove referred to, shall be upon the condition and understanding that the New Company shall pay to The Frigidaire Corporation a royalty equal to five percent (5%) of the selling price of all "said products" manufactured and sold by the New Company under said patents, which royalties shall be determined after freight and cash discounts have been deducted, and upon the further understanding that if during any year the net profits of the New Company shall be insufficient to pay said royalties and the fee of du Pont, under Paragraph Eighth of this agreement, then the New Company shall deduct from the total royalties payable to The Frigidaire Corporation during such year an amount which shall equal one-half of the difference and shall pay the same to du Pont.

Thirteenth: The royalty of five percent (5%) payable to The Frigidaire Corporation, and referred to in the last preceding paragraph, shall be payable for a period of seventeen years from the date hereof, but if at the end of five years from the date hereof said Letters Patent, or any of them, shall not be issued, then said royalty shall cease and terminate with respect to any of the "said products" not covered and protected by Letters Patent, to the extent that

the New Company shall enjoy a practically commercial monopoly in the production thereof.

Fourteenth: It is agreed that du Pont shall be reimbursed by the New Company for the cost of any and all research or experimental work carried on with reference to "said products" prior to the time that the New Company shall commence to function as a going concern, and thereafter both du Pont and General shall be reimbursed for any and all research or experimental work conducted at the request of the New Company.

Fifteenth: Neither du Pont nor General will sell, pledge or otherwise dispose of any of their stock in the New Company without first offering such stock to the other and giving to the other fifteen days to purchase the same at a price and upon terms at least as favorable as the price and terms at which it is intended to dispose of such stock, and if a disposition to a third party is not effected at such price and terms within

forty five days after the expiration of such fifteen days, then the stock may not be disposed of without again offering the same as hereinabove provided.

In Witness Whereof the parties hereto have caused this agreement to be executed by their officers, duly authorized,

and their respective corporate seals to be hereunto affixed on the day and year above written.

GENERAL MOTORS CORPORATION,

By .....

Attest:

.....

E. I. DU PONT DE NEMOURS & COMPANY,

By .....

Attest:

.....

NOTE: A handwritten check mark appears in upper right hand margin after typewritten notation "Copy to Mr. E. G. Robinson," through which typewritten notation has been drawn a pencilled line. A handwritten check mark appears opposite the date July 14, 1930.

At bottom of document appears the signature (handwritten) of M. D. Fisher.

NOTE: In line 8 from top of page the words "in such service" have been underscored by hand; in ninth line from top the word "such" has been underscored by hand; in tenth line from top of page the words "such service" have been underscored by hand. Between the 17th and 18th lines from top of page appears illegible handwriting in parentheses.

Defendant's Exhibit (DP) No. 135

MONTHLY REPORT OF PRESIDENT

TO BOARD OF DIRECTORS OF KINETIC CHEMICALS, INC.

FOR JANUARY, 1932

5958

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7. SALES ACTIVITIES

Several important changes have been made in the original contract set up for the sale of Freon. The price of Freon was reduced on January 1st to Frigidaire Corporation from $.55, f.o.b. Deepwater Point, freight allowed, to $.45 per pound, f.o.b. Deepwater Point.

As we are following a one price policy, this necessitated a reduction of the price schedule for the general trade.

While there have been many inquiries concerning the price and availability of our product no contracts have yet been negotiated. This is due to several conditions which must be corrected before we can expect to place many prospective buyers under contract.

The first in matter of importance is the code situation. Definite effort on the part of certain manufacturers of refrigerating equipment, using long established refrigerants, is being made to prevent Freon from receiving the special classification to which it is entitled due to its superiority from the standpoint of toxicity and flammability. Vigorous attempts have been made to have Freon grouped with refrigerants such as SO_2 and ammonia, both in the A.S.A. and New York City codes. Every effort is being made by Kinetic to secure for Freon the proper recognition by all public authorities interested in the regulation of its use. It is felt that definite progress has been made for the proper protection of Freon in the codes, but, general sales will be adversely affected until this matter is finally settled.

The Sales Department has contacted many prospective customers

during the month and has carried on a vigorous educational campaign which is creating a growing interest in our product.

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Defendant's Exhibit (DP) No. 136

5960

November 7, 1935

Kinetic

SALES ACTIVITIES

During the month of October there was sold 155,740 pounds of "Freon" refrigerants which was 86.0 per cent of the forecasted amount, and a decline of 29.3 per cent from September.

It is exceedingly difficult to forecast requirements in the final quarter of a year because of the ~~vagaries of~~ changes being made by the refrigerating machinery manufacturers in their product programs. It is likely that our forecast will not be far wrong covering a three months period. During the month we signed a contract with the Deissler Machine Company on the cash basis.

The small manufacturers of refrigerating equipment mean very little to us in sales volume. 93.5 per cent of our sales of "Freon-12" are made to a group of nine companies, 86.7 per cent to six companies, 63.3 per cent to three companies, 50 per cent to two companies, and only 6.5 per cent to fourty-one other concerns. However, for the sake of open competition it is a wise policy to sell to the smaller companies.

I anticipate that not more than eight companies will always contribute more than 85 per cent of our business.

W. W. Rhodes

SALES MANAGER

NOTE: In upper right hand margin of page appears handwritten notation "R.C.26-A"; in top center of page appears handwritten word "Kinetic"; first sentence of document is encircled by handwritten parenthesis; in first sentence of second paragraph the words "vagaries of" have been stricken and "changes being made by the" inserted in substitution therefor in handwriting; in first sentence of 2nd paragraph typewritten word "product" has been changed in handwriting to word "production". Illegible handwritten inserts or corrections appear in second sentence of 2nd paragraph. Handwritten paragraph sign appears at beginning of third sentence of second paragraph; word "the" (typewritten) has been stricken from third sentence of second paragraph and handwritten "a" substituted therefor. A vertical line (handdrawn) appears in the left hand margin opposite the third and fourth paragraphs of document. Handwritten signature of W. W. Rhodes appears at end of document.

WWR:ALL

3685

Defendant's Exhibit (DP) No. 137

5961

May 27, 1931.

Mr. E. G. Biechler:

During our meeting yesterday with Mr. Robinson, at which time you requested him to progress rapidly on the expansion of the plant facilities at Kinetic Chemicals, the possibility of future use of F-114 in commercial equipment, instead of F-12, was mentioned. To be sure that we are making the right move in changing to the new refrigerant, and that we are changing to the correct refrigerant, I have reviewed this question rather fully this afternoon with interested members of the Engineering Department.

Of course there are a number of variables, and we cannot be sure that the moves we are making now are exactly in line with what we will be doing two or three years from now. However, we feel that the use of F-12 in the commercial equipment this Fall is the correct thing to do, and we cannot foresee the use of F-114, or other refrigerants in the future which would make that decision an incorrect one.

So that all interested parties are posted, I am sending you a summary of the conclusions and the reasons why they were reached.

It is not logical to assume that either F-12 or F-114 solves all of the problems for the different kinds of machines and the different applications. Therefore, we will probably have to have both of these refrigerants for a considerable time to come. The F-12 is particularly suited to low temperature work because of its low boiling point (—22). It is also especially suited to piston type compressors where stuffing boxes are required. F-114 is less

3686

suited to piston type compressors because they cannot continuously and efficiently pump to the low back pressures demanded for low temperature work. The F-114 is not so well suited to compressors having stuffing boxes as F-12, because the former must operate below atmospheric pressure and thus any slight leaks will admit air to the system instead of permitting refrigerant to leak out of the system, thus causing high head pressures, low operating efficiencies, and overloaded and burnt out motors.

Without any doubt, it will be necessary for us to use piston type compressors in our larger sizes for a good many months, even though we make very rapid progress toward rotary units for commercial work. We are of course starting this work on the small sizes. Furthermore, it may be necessary to continue the use of stuffing boxes in the larger compressors for a number of months, or possibly indefinitely, because it is impracticable to get rid of the motor heat in a totally enclosed air cooled motor.

May 27, 1931.

The above considerations demand that F-12 be used in certain of our commercial jobs for the immediate present and for some little time in the future.

On the other hand, F-114 is especially suited to our rotary type compressors and F-12 is very much unsuited to this type of compressor because of the higher pressure difference with F-12 between the high and low sides. Therefore, we must use F-114 in a certain number of the household and smaller commercial jobs which can be handled as package goods.

These considerations leave us only one possible conclusion, and that is that we will use both F-12 and F-114

during 1932, and therefore our decision to go ahead with F-12 apparatus, as rapidly as the plant capacity of Kinetic Chemicals permits, is the correct one.

E. B. Newill

CC—Messrs. Godfrey
Harlan
Vandoren
Barney
Williams
Schweller
Hull

3
E

Defendant's Exhibit (DP) No. 138

5964

August 9,

Mr. C. D. Porch, Vice President,
Kinetic Chemicals, Inc.,
Wilmington, Dela.

Dear Mr. Porch:

We sincerely appreciate your letter of August 2, outlining basis on which F-114 can be supplied to us.

Mr. Pratt was here yesterday and he, too, was pleased with the way this subject had been handled, having read previously, copy of your letter to us.

We would like to go ahead on the basis outlined in your letter and we suggest you get ready to supply us F-114. I will ask Mr. Barney to supply you with tentative schedules within the next few days.

Mr. Pratt and we are very much impressed with the possibilities we have in mind in connection with the use of F-114 in the machine you saw when you were here and, Mr. Pratt has expressed the wish, with which we concur, that F-114 be held exclusively for us for an indefinite period. We would very much appreciate it if you would handle the matter on this basis and this can be more definitely discussed at the next Kinetic Board meeting.

Assuring you of our appreciation and your cooperation in this entire matter, we are

Yours very truly,

/s/ E. G. Biechler
President and General Manager

EGB/CL
CC Mr. Pratt, Mr. Newill, Mr. Barney

Note. "Copy" stamped across face of letter. "Mr. Newill" is checked at bottom.

Defendant's Exhibit (DP) No. 139

KINETIC CHEMICALS INC

5965

November 24, 1933

File

Mr. A. A. Levine
E. I. duPont de Nemours & Company
The R. & H. Chemicals Department
Niagara Falls, N. Y.

Dear Mr. Levine:

Referring to your letter of November 20th addressed to the Jackson Laboratory for the attention of Dr. L. C. Holt, would advise that we can ship you 10 pounds of F-12 at any time, but through a ruling of the Board of Directors of our company there is not any F-114 available for sale or transfer. Consequently, we shall not be able to supply you with even a small amount of F-114.

With respect to the F-12, you may either send us one of your cylinders for filling or we shall supply it to you in one of our own. It makes little difference. If you send the cylinder to our Works at Carney's Point, please advise us when it goes forward.

Yours very truly
KINETIC CHEMICALS, INC.

W. W. Thoden
Sales Manager

Cancel
Test a ten lb.
Cylinder and ship
to Kinetic
Dec 13

This has been ordered.

WWR NSS

2690

5966

THIS AGREEMENT made this 18th day of September, 1939, by and between

KINETIC CHEMICALS, INC., a corporation of the State of Delaware (hereinafter referred to as KINETIC)

and

GENERAL MOTORS CORPORATION, a corporation of the State of Delaware (hereinafter referred to as GENERAL MOTORS).

W I T N E S S E T H, that:

WHEREAS, by an agreement dated May 1, 1932, Frigidaire Corporation, a corporation of the State of Delaware, granted to KINETIC an exclusive license under its applications and patents to make, use and sell certain products, said grant being subject to the right reserved by Frigidaire Corporation for itself and GENERAL MOTORS, to use such products as refrigerants in their own business;

WHEREAS, the license so granted by Frigidaire Corporation conferred upon KINETIC, inter alia, the exclusive right, subject to the reservation noted above, to make, use and sell tetra-fluoro-dichloro-ethane covered by the Henne U.S. Patent No. 2,007,198, issued July 9, 1935;

WHEREAS, GENERAL MOTORS has succeeded to the rights and obligations of the Frigidaire Corporation under the said agreement and the parties hereto desire to amend said agreement in the manner and to the extent hereinafter set forth in so far as it concerns the use and sale of tetra-fluoro-dichloro-ethane.

3691

5967

NOW, THEREFORE, in consideration of the payment by GENERAL MOTORS to KINETIC of One Dollar ($1.00), receipt of which is hereby acknowledged, it is mutually agreed as follows:

ARTICLE I

Subject to the limitations and conditions hereinafter set forth, KINETIC hereby grants to GENERAL MOTORS the sole and exclusive right and license, under said Henne Patent 2,007,198 and under any other patent licensed to KINETIC by virtue of said agreement of May 1, 1932, and covering tetra-fluoro-dichloro-ethane or its use as a refrigerant, to use said product in, and to sell said product in or for use in, refrigerating apparatus or equipment, it being expressly understood and agreed, however, that no right or license is granted to GENERAL MOTORS by this agreement, or reserved by GENERAL MOTORS by said agreement of May 1, 1932 to make tetra-fluoro-dichloro-ethane.

ARTICLE II

It is agreed between the parties that if in any calendar year expiring subsequent to the date hereof and during the term of said Patent 2,007,198, fifty per cent (50%) or more than fifty per cent (50%) of the number of units of household refrigerators sold by GENERAL MOTORS under its own name plate do not contain, at the time of sale or installation, tetra-flucro-dichloro-ethane as the refrigerant, then KINETIC may at its option convert the exclusive license granted to GENERAL MOTORS under Article I hereof to a non-exclusive license for the remainder of the term of said license by giving GENERAL MOTORS written notice to that effect within ninety (90) days from the expiration of any such year, provided however, that this

3692

provision shall not apply in any year in which KINETIC refuses or is unable, by reason of strikes or for any other reason, to supply GENERAL MOTORS with its requirements of tetra-fluoro-dichloro-ethane. For this purpose, GENERAL MOTORS agrees to furnish KINETIC within thirty (30) days from the expiration of each calendar year in question a verified statement showing the percentage of household refrigerators sold by it during the preceding year under GENERAL MOTORS' own name plate and not containing tetra-fluoro-dichloro-ethane as the refrigerant.

ARTICLE III

(a) GENERAL MOTORS hereby confirms in KINETIC, under the patents hereby licensed to GENERAL MOTORS, the exclusive right and license to manufacture tetra-fluoro-dichloro-ethane, and further confirms in KINETIC the exclusive right and license under such patents, with the right to sub-license others, to use and sell for use tetra-fluoro-dichloro-ethane in any connection or field outside of the field of refrigeration.

(b) GENERAL MOTORS further confirms in KINETIC the non-exclusive right and license under the said patents, with the right to sub-license others, to use and sell for use tetra-fluoro-dichloro-ethane in the field of refrigeration, but only in the event the exclusive license hereby granted GENERAL MOTORS is converted to a non-exclusive license in accordance with the provisions of this agreement.

(c) In the event KINETIC hereafter sells tetra-fluoro-dichloro-ethane to any other party pursuant to sections (a) and (b) of this Article, KINETIC agrees that it will not sell said product to any such party at a more favorable price than that at the same time offered to GENERAL MOTORS.

ARTICLE IV

(a) The rights and licenses herein confirmed or granted shall terminate upon the termination of this agreement, and shall extend to all patents, domestic and foreign, licensed to KINETIC by virtue of said agreement of May 1, 1932 and covering tetra-fluoro-dichloro-ethane or its use as a refrigerant, but to no other patent.

(b) In so far as there is any conflict between this present agreement and the said agreement of May 1, 1932 with respect to the use and sale of tetra-fluoro-dichloro-ethane, the provisions of this present agreement shall supersede the former agreement and shall be controlling, it being understood and agreed, however, that any right or license hereby confirmed or granted shall be subject to the conditions set forth in the second, third, fourth, fifth, sixth and seventh paragraphs of said agreement of May 1, 1932.

(c) It is specifically agreed between the parties hereto that nothing herein contained shall be construed as affecting, by implication or otherwise, the rights of the parties as set forth in said agreement of May 1, 1932, with respect to any other product than tetra-fluoro-dichloro-ethane.

ARTICLE V

(a) In the event that the claims of the licensed patents dominating tetra-fluoro-dichloro-ethane and the use thereof as a refrigerant are declared invalid by a lower court from which no appeal is taken or by a court of last resort, then, after the expiration of the limit for appeal or after the date of entry of the decree of the court of last resort, as the case may be, either party hereto may, at its option, terminate this agreement by written notice to the other.

(b) This agreement shall terminate in its entirety on July 9, 1952 unless sooner terminated, either in a manner hereinbefore provided for or by mutual consent of the parties hereto.

ARTICLE VI

(a) This agreement and the licenses herein granted shall inure to the benefit of each of the parties hereto and their subsidiaries and to the benefit of the successors and assigns of the entire business relating hereto of each of the parties, but otherwise shall not be assignable.

(b) For the purpose of this agreement a subsidiary company shall be defined as any corporation or organization more than fifty per cent (50%) of the voting shares of which are owned directly or indirectly or the voting rights of which are controlled by the party concerned.

IN WITNESS WHEREOF the parties hereto have caused this instrument to be executed in duplicate by their representatives, duly authorized, and their respective seals to be hereunto affixed as of the day and year first above written.

KINETIC CHEMICALS, INC.

By E. G. Robinson (s)
President

ATTEST:

E. A. Howard (s)
Asst. Secretary

GENERAL MOTORS CORPORATION

By E. R. Breech
Vice President

L.R.G.
H.C.H.
J.E.K.

ATTEST:

R. Fuhr
R. Ewbank J. E. Dawson
Asst. Secretary

Defendant's Exhibit (DP) No. 141

CC: Mr. E. G. Biechler
Frigidaire Division
General Motors Corporation
Dayton, Ohio

KINETIC CHEMICALS, INC.
WILMINGTON, DELAWARE

5971

April 3, 1942

Mr. F. E. Anderson
F. E. Anderson Oil Company
Portland, Connecticut

Dear Mr. Anderson:

Mr. E. G. Biechler, of the Frigidaire Division of the General Motors Corporation, has forwarded to me your letter of March 28th, and I note that you have disclosed to Mr. Biechler information which I requested in my letter of March 19th.

We will supply you with approximately a gallon of "Freon-114" which you require for your experimental work at the price of 80¢ per pound when contained in a pressure cylinder of approximately eleven pounds capacity. The cylinder is charged extra at $15.00, but is returnable to our Works at Carney's Point, New Jersey, if returned within 90 days of date of shipment in good condition.

The above prices are f.o.b., Portland, Connecticut, and the cylinder may be returned on a collect bill of lading for full allowance. Our terms are net cash 30 days for "Freon-114" and a deposit must be made on the cylinder at the same time the remittance is sent us for its contents.

If you developed a commercial use for the "Freon-114" and could take it in larger size cylinders, we could make you a lower price. On receipt of your purchase order the shipment will be made promptly.

Yours very truly,

KINETIC CHEMICALS, INC.

Sales Director

WWR:DR

3696

Defendant's Exhibit (DP) No. 142

FORM 60-5010

KINETIC CHEMICALS, INC.

WILMINGTON, DELAWARE

5972

CABLE ADDRESS KINETICHEM

October 20, 1943

Mr. E. F. Johnson
Vice-President
General Motors Corporation
Detroit, Michigan

Dear Mr. Johnson: "FREON-114"

In our meeting in Mr. Harrington's office on September 2nd the above subject was discussed. It was suggested that inquiry should be made to determine whether Frigidaire is now in a position to release its control of this refrigerant so that Kinetic could offer it to the general trade without further restriction.

We are interested to know whether you have had an opportunity to look into this matter, and, if so, would appreciate your advising us at your convenience of its present status.

Yours very truly,

C. D. Porch

C. D. Porch,
President

CDP/h

3697

Defendant's Exhibit (DP) No. 143

FRIGIDAIRE DIVISION
GENERAL MOTORS CORPORATION
DAYTON OHIO. U. S. A.

5973

EXECUTIVE OFFICES

February 23, 1944

Mr. C. D. Porch
Kinetic Chemicals, Inc.
Wilmington, Delaware

Dear Mr. Porch:

In accordance with our telephone conversation yesterday, I am attaching a copy of our proposed arrangement on Freon-114 which, if agreed to by all parties concerned, would make it possible to sell Freon-114 to any prospective customer.

I realize that the five cents per pound license fee mentioned in agreement, will present a problem to Kinetic as far as obtaining OPA approval for the price increase necessary to cover this fee.

However, we at Frigidaire feel that the fee is entirely justified to enable us to recover part of the expense of $1,000,000 or over which we have spent for Engineering development costs for the satisfactory commercial utilization of Freon-114.

We will be glad to have your comments after you and your organization have had an opportunity to study the matter.

Very truly yours,

E. R. Godfrey
General Manager

ERG:RH
Attachment

NOTE: "Received Feb 25 1944 C. D. Porch" is stamped under date line.

E

3698

Defendant's Exhibit (DP) No. 144

GENERAL MOTORS CORPORATION

DETROIT, MICHIGAN 5974

April 22, 1944

Mr. C. D. Porch, Pres.,
Kinetic Chemicals, Inc.,
Wilmington, Delaware.

Dear Mr. Porch:

After further review and consideration of point of view expressed in your letter dated March 10, 1944, it has been decided that the interests of all concerned will best be served by terminating agreement of September 18, 1939 which grants an exclusive license to our Frigidaire Division for the use and sale of F-114 in refrigerating apparatus. Three copies of agreement effecting this cancellation are enclosed. If acceptable to you, will you kindly sign in space provided, returning two copies to us for our files, retaining one for your own files.

It is understood that this action does not modify in any manner the terms of agreement of May 1, 1932 between Frigidaire Corporation and Kinetic.

Yours very truly,

EC Fisher

Vice President

EFJ/LM
Encl. (3)
cc to Messrs. O. E. Hunt
J. T. Smith
E. R. Godfrey
L. M. Spencer

E

Defendant's Exhibit (DP) No. 145

UNITED STATES

DEPARTMENT OF JUSTICE

WASHINGTON 25, D. C.

5975

November 30, 1949

E. I. du Pont de Nemours & Company
Wilmington
Delaware.

Attention: Mr. H. C. Haskell

Dear Sirs:

I refer to letters from Mr. Horsky of October 13 and November 8, 1949, in which he advised me that an agreement has been reached whereby the du Pont Company is prepared to purchase all of the stock now held by General Motors Corporation in Kinetic Chemicals, Inc., and transmitted to me the minutes of the du Pont Executive Committee setting forth the details of the proposed transaction.

This is to advise you that the Department does not object to the consummation of the agreement referred to. In the event that du Pont thus acquires the stock now held by General Motors, the Department will waive that part of its prayer for relief relating to Kinetic (Paragraph 17, page 69 of the Complaint) in United States v. E. I. du Pont de Nemours & Co., Civil Action No. 49 C-1071 (N.D. Ill.).

It should be clearly understood, however, that the Department, if it deems it desirable and advisable to do so, is free to introduce evidence at the trial of the above action relative to history and background and all other aspects of joint operation and control by du Pont and General Motors of Kinetic.

Sincerely yours,

/s/ Herbert A. Bergson

HERBERT A. BERGSON
Assistant Attorney General

3709

E

Defendant's Exhibit (DP) No. 148

5976

March 19,1935

Copy to:
J.E.Crane - London

F. W. PICKARD, VICE PRESIDENT

IRON CARBONYL

Mr. Midgeley of the Ethyl Gasoline Corporation comes into my office about once a week and each time I ask him how they are getting along with the tests relative to the suitability of iron carbonyl. Each time Mr. Midgeley tells me that iron carbonyl probably will be all right except that they have been entirely unable to overcome bridging of the spark plugs which necessitates the cleaning of the spark plugs in 400 miles and upwards. Mr. Midgeley's opinion is that iron carbonyl will be of no commercial value unless this difficulty can be overcome. He has stated to me repeatedly and as recently as yesterday repeated that to-date they have found no way to overcome this difficulty and they have not even any idea as to how it might be done, though they are working on the subject.

I told this to Mr. Lamot duPont this morning and suggested that it would be probably best for us to see that the Badische Company is acquainted with this difficulty before they come over here. It would probably would not look well to advise them of this difficulty only on their arrival in this country. Further Mr duPont suggests that it might be well to check Mr. Midgeley's statement by talking with Mr. Kettering. I tried to talk with you this morning about this subject but find that you are in New York and will not return until Saturday, for which reason I am writing you this letter. I would be very glad to talk this matter over with you on your return to your office.

FILE COPY

Fin Sparre

DIRECTOR

FS:M

NOTE: The signature "Fin Sparre" has been placed on the document by rubber stamp.

3707

Defendant's Exhibit (DP) No. 154

5977

Letterhead of

E. I. DU PONT DE NEMOURS & COMPANY
(INCORPORATED)
CHEMICAL DEPARTMENT
WILMINGTON, DELAWARE

Copy to—Mr. Irenee duPont.

Mr. J. A. Haskell,
General Motors Corporation
1764 Broadway,
New York City.

November 4, 1919.

Dear Sir:—

STUDY OF MOTOR FUELS.

Enclosure: Copy of a letter from General Motors Corporation of October 28th.

In connection with Mr. K. W. Zimmerschied's letter of October 28th, we shall, of course, be glad to co-operate with the Dayton Laboratories in every possible way, and to undertake "the development of chemicals which may be added to undesirable fuels for the purpose of converting them into useful products". It seems to us that the scope of the problem of the utilization of undesirable fuels in Internal Combustion Engines is not merely the discovery of some cure-all which can be added in small quantities to kerosene in order to bring about the use of kerosene instead of gasoline, but rather the problem of utilizing a fuel consisting of a mixture of gasoline with the maximum possible quantities of other undesirable fuels, such, for example, as kerosene.

3782

In connection with Mr. Zimmerschied's letter, I note the suggestion that the expense of developing some chemical which may be added to liquid fuel for the purpose of utilizing undesir-

able fuels in Internal Combustion Engines should be borne by the DuPont Company. As we have no funds available for research work of this character, it will be necessary to obtain an appropriation from some source for this work. Insofar as the question of the ultimate distribution of the expense of such research work is concerned, it seems to me that this can only be decided on the basis of the results of the work, since it is obvious that if the General Motors Corporation derives more benefit from such research than does the DuPont Company, the General Motors, rather than the DuPont Company, should ultimately take up the expenditures for work of this character.

Yours very truly,

Chemical Director.

CMS:SJB

NOTE: At upper right of first page is written the figure "91"; the name of Mr. Irenee du Pont at the top of the first page is underlined by hand and is followed by a pencilled check mark; the address is deleted by an irregular line; at the bottom of both pages is written "GMC-781".

E. I. du Pont de Nemours & Company
(Incorporated)

ADVICE OF ACTION

May 4, 1920.

Mr. Lammot duPont, Chairman.

SUBJECT

Chemical Work for General Motors Corporation:

ACTION TAKEN BY Executive Committee

AT MEETING May 3, 1920.

REMARKS

Referring to your report of April 22nd:

It was moved and unanimously carried that this report be accepted and ordered filed, and that the proposed method of handling chemical work for the General Motors Corporation be approved in principle, with the understanding that the final agreement will be submitted to this Committee for approval before execution.

[Stamp] M. D. Fisher.
Sec'y. Executive Committee.

NOTE: "Return to Executive Committee Room 9069" is stamped at bottom of page. "X-1100" and "Copy X-234" are written at top of page. "GMC 1520." is written at bottom of page.

May 4, 1920.

DR. C. L. REESE:

CHEMICAL WORK FOR GENERAL MOTORS.

I enclose herewith copy of my report, April 22d, to the Executive Committee (No. 2900), which was approved in principle by the Executive Committee yesterday, with the further provision that any definite agreement executed with General Motors Corporation be finally submitted for approval.

You will note the correction at the end of the second line of the second paragraph of this report. This was not in the report when submitted to the Executive Committee, but was added afterwards at the suggestion of Mr. Irenee du Pont. If and when it seems desirable to make a definite agreement with General Motors, will you please proceed, as far as possible, in accordance with this report and submit the agreement for approval of the Executive Committee before execution?

LduP/MD

NOTE: "File Copy" is printed across page and "Return to Executive Committee Room 9069" is stamped at bottom of page. "X-1100" is written at top and "GMC 1521." is written at bottom of page. At top center is written a check mark.

Defendant's Exhibit (DP) No. 157

5981

EXTRACT FROM MINUTES OF
EXECUTIVE COMMITTEE MEETING #367

JUNE TWENTY SECOND, 1920

E. I. DU PONT DE NEMOURS & COMPANY

FORM OF PROPOSED AGREEMENT BETWEEN GENERAL MOTORS CORPORATION AND CHEMICAL DEPARTMENT OF DU PONT COMPANY:

Letter was received from the Chairman, dated June 15, 1920 (#3220), submitting copy of the above-mentioned proposed agreement, and after discussion the following resolution was offered and unanimously adopted:—

RESOLVED, that the form of proposed agreement between General Motors Corporation and the Chemical Department of this Company, as submitted with the Chairman's letter of June 15, 1920 (#3220), be and the same is hereby approved and the President or any Vice-President of this Company together with the Secretary or an Assistant Secretary be and they are hereby authorized to execute said agreement on behalf of this Company.

L duP
CLR
✓

NOTE: Italics indicate handwriting. Check mark in left margin is by hand.

Defendant's Exhibit (DP) No. 158

5982

E. I. DU PONT DE NEMOURS & COMPANY
(Incorporated)

March 24, 1922.

Mr. H. F. Brown, V.P.

In accordance with your request at the last Executive Committee meeting, this merely to remind you to look up the present status of the proposed agreement between this Company and the General Motors Corporation with reference to chemical work.

M D Fisher
Sec'y, Executive Committee.

2.

NOTE: "Return to Executive Committee Room 9069" is stamped, and "GMC 1545" is written, at bottom of page. Italics indicate handwriting.

Defendant's Exhibit (DP) No. 159

5983

Mr. L. duPont/

~~MR. H. F. BROWN, V. P.:~~

Please note the attached for your information. It seems to me a most remarkable position for the Head of the Research Corporation to take.

L. DU PONT, V. P.

May 10, 1922.

NOTE: "Received May 11 1922 Lammot du Pont" is stamped at top and "GMC 1553." and "Noted & ret'd H F Brown" is written at bottom of page. Italics indicate handwriting. Line through "MR. H. F. BROWN, V. P.:" is a pencil line.

Defendant's Exhibit (DP) No. 160

5984

Excerpt of the Monthly Report of the President of the du Pont Viscoloid Company for the Month of February, 1928.

* * * *

We have contacted and are working with the safety glass committee of General Motors in an effort to help them develop the safety glass proposition.

* * * *

3789

Defendant's Exhibit (DP) No. 161

5985

Excerpt of Report of the President of the du Pont Viscoloid Company dated September 22, 1928.

* * * *

THIN PLATE GLASS INDUSTRY

The ultimate acceptance of safety glass will mean a revolution in the plate glass industry in order to provide the necessary quantity of thin plate glass to replace the heavy plate glass now in use. That the plate glass industry believes such a revolution is to be expected is clearly indicated by the tremendous construction program which is now being carried out by the glass manufacturers.

The Pittsburgh Plate Glass Company has adopted a construction program requiring the expenditure of $14,000,000. for the purpose of remodeling plants and machinery for the production of thin plate glass (1/8").

Libby Ownes Sheet Glass Co., according to recent newspaper announcement, is spending $5,000,000 for similar improvements.

The National Plate Glass Co. is reported to be proceeding with the construction of a new plant for the production of 24,000,000 feet per year of the thin plate.

In a recent article in the Wall Street Journal of September 19, 1928, all of the above projects are mentioned and the statement was made that the Ford Plate Glass Co.,

3790

M2

the Standard Plate Glass Co. and the American Window Glass Co. are all engaged upon extensive construction programs because of the new safety glass development.

* * * *

Defendant's Exhibit (DP) No. 162

5987

Excerpt of the Monthly Report of the President of the du Pont Viscoloid Company for the Month of October, 1928.

* * * *

Considerable operating time was lost during the month of October because of lack of orders. This condition, however, is considered to be merely temporary as there are excellent prospects for largely increased sales as soon as the new models are brought out by the different automobile manufacturers. Both Hudson and Studebaker will adopt DUPLATE windshields; in addition Chrysler will continue to use DUPLATE windshields in Model 75, with the possibility of adopting DUPLATE throughout this model. Chrysler will also continue using DUPLATE throughout on Model 80; Cadillac and LaSalle will continue to use safety glass throughout, altho we understand that their requirements will be divided between DUPLATE and the product of other manufacturers.

* * * *

Defendant's Exhibit (DP) No. 163

Excerpt of Report of R. W. Brokaw to Board of 5988
Directors of the du Pont Viscoloid Company
dated February 21, 1929.

* * * *

To date Safety Glass has been adopted by the following manufacturers:

Make of Car	Windshield only	All Windows
Buick	Optional	Optional
Cadillac-LaSalle		X
Chrysler	75 Model	80 Model
DuPont		X
Cunningham		X
Ford	X	DeLuxe Model
Franklin	X	
Hudson	X	
Lincoln		X
Pierce Arrow		X
Rolls Royce		X
Studebaker	X	
Stutz		Black Hawk
Viking (Oldsmobile)	X	
Yellow Cab	Division windows	

We are also advised by General Motors officials that if safety glass is a success it probably will eventually be adopted for use in the Chevrolet in competition with Ford, provided it would not increase the cost over $15 or $20 per car.

2793

5989

General Motors is installing experimental equipment for compositing safety glass which they hope will take care of Cadillac and LaSalle demands. When they have determined the best method of compositing they also expect to build a regular compositing plant at their subsidiary, the National Plate Glass plant at Ottawa.

National Plate Glass Co., Ottawa, Ill., are building a plant for the production of 22,000,000 sq. ft. per year at a cost of three to four million dollars and expect to double this capacity after the compositing plant is completed.

* * * *

Defendant's Exhibit (DP) No. 164

5990

Excerpt of the Monthly Report of the President of the du Pont Viscoloid Company for the Month of April, 1929.

* * * *

Forecast For Next Month's Sales

The forecast which had been made for May indicated sales of 200,000 square feet. It is now evident that this forecast will not be met as several of the automobile manufacturers have reduced output. Furthermore, a larger proportion of the safety glass for Cadillac and LaSalle is being produced by the Fisher Body Company. The progress which is being made by the General Motors and its subsidiaries in laminating safety glass indicates that the best prospects for the immediate future for Duplate sales depend upon manufacturers other than General Motors.

There is nothing to indicate that either Buick or Chevrolet will adopt safety glass in the immediate future.

* * * *

Defendant's Exhibit (DP) No. 165

5901

Excerpt of the Monthly Report of the President of the du Pont Viscoloid Company for the Month of May, 1929.

* * * *

Sales Comments

Shipments during the month of May were approximately 138 000 square feet. The volume of sales for May was disappointing and considerably less than the estimate made in last report. Solicitation has been carried on and quotations made with practically all of the automobile and body manufacturers. There is a general interest but apparently each is waiting for the other to adopt safety glass. The increased cost of Duplate over plate glass per car is the greatest obstacle for making sales and it is quite natural that manufacturers hesitate to increase the cost of their car unless compelled to do so by competition.

The adoption of laminated glass by any of the leading manufacturers in medium priced cars would do much to stimulate the demand. The manufacturers solicited state that there is a very small consumer demand and that they receive very few inquiries or comments from their agents with respect to laminated glass. When the general public begin to appreciate the safety glass factor of laminated glass and insist upon having their automobile equipped with it, the automobile manufacturers will be more receptive to our solicitation.

3796

While Fisher Body is laminating glass in their own plant for Cadillac and LaSalle, Duplate is supplying part of their requirements. Fisher is making the Viking windshield.

General Motors are not yet ready to consider the use of laminated glass in their cheaper models although they are of the opinion they will be forced to do so later on. They are going to postpone the adoption as long as possible in order to save the money that would be added to the cost of the car through the adoption of Duplate.

* * * *

Defendant's Exhibit (DP) No. 166

5993

Excerpt of the Monthly Report of the President of the du Pont Viscoloid Company for the Month of September, 1929.

* * * *

Sales prospects in automobile industry appear encouraging altho there are no important developments with General Motors units.

Marmom previously reported as having adopted a combination of sheet and plate glass lamination, have reconsidered and will use Duplate throughout for their best models.

Franklin are using Duplate for 50% of their requirements. The balance is being purchased from Safetee Glass Company.

* * * *

Excerpt of Minutes of Meeting of Board of Directors of the DuPlate Corporation Held October 24, 1929.

* * * *

SALES PROSPECTS -SIX- TWELVE MONTHS

Mr. Pitcher inquired as to the prospects for increased sales within the next period of six to twelve months.

It was stated that there was practically no prospect for Buick until July 1930, except for optional equipment, which is now running on a fairly large scale, but is being supplied principally by the Fisher plant. Chevrolet was also reported as being out of the question until 1930.

* * * *

Defendant's Exhibit (DP) No. 168

5995

Excerpt of the Monthly Report of the President of the du Pont Viscoloid Company for the Month of December, 1929.

* * * *

Use of Safety Glass in Automobiles

At the beginning of 1930 the use of safety glass in automobiles is approximately as follows:

FORD	Windshields, made by Triplex and Ford.
LINCOLN	Safety Glass throughout, made by Triplex.
GENERAL MOTORS	
Buick	Optional, extra expense. Made by Duplate or Fisher Body Corporation.
Cadillac	Safety Glass throughout. Made by Duplate or Fisher Body Corporation.
LaSalle	Safety Glass throughout. Make by Duplate or Fisher Body Corporation.
Chevrolet	No safety glass.
Oakland	" " "
Pontiac	" " "
Oldsmobile	" " "
Marquette	" " "
Viking "8"	Windshield safety glass. Made by Fisher Body Corp. or Johnston Glass Company.
CHRYSLER "80"	Safety Glass throughout. Made by Duplate.
" "others"	No safety glass.
DE SOTO "8"	" " "
DODGE	" " "
HUDSON	Windshield safety glass. Made by Duplate.
ESSEX	No safety glass.
HUPMOBILE	Now considering adopting safety glass.
NASH "8"	Safety glass throughout. Made by Duplate.
NASH "6"	No safety glass.
PACKARD	Safety glass throughout. Made by Libbey-Owens Glass Company and Indestructo Glass Company.

3800

STUDEBAKER "8"	Safety glass throughout. Made by Duplate.
STUDEBAKER "6"	Windshields on some models made by Duplate.
ERSKINE	No safety glass.
WILLYS KNIGHT	" " "
WHIPPET	" " "
GRAHAM-PAIGE	Safety glass throughout. Made by Libbey-Owens.
MARMON	" " " Made by Duplate.
ROOSEVELT	Considering special type Duplate.
PEERLESS	Safety glass throughout in special models. Made by Duplate.
PIERCE-ARROW	Safety glass throughout. Made by Duplate.
AUBURN	No safety glass.
CORD	" " "
WINDSOR	" " "
STUTZ	Safety glass throughout in special model. Made by Duplate and others.
DURANT	No safety glass.
FRANKLIN	Safety glass throughout. Made by Indestructo.
REO	Considering safety glass for windshields or throughout.

Defendant's Exhibit (DP) No. 169

5997

Excerpt of Annual Report of the du Pont Viscoloid Company for the Year of 1929.

* * * *

Competition became more severe during the year. In the latter part of 1929 the new factory of Libbey-Owens Glass Company came into production with strong sales efforts being made to secure business. Fisher Body Company increased production with the result that they were able to supply practically all safety glass required for Cadillac and LaSalle, and with a consequent loss of this business which had previously been supplied by Duplate.

* * * *

3802

Defendant's Exhibit (DP) No. 170

5998

Excerpt of Minutes of Meeting of Board of Directors of the DuPlate Corporation Held March 4, 1930.

* * * *

SALES PROSPECTS:

Mr. Higgins states that there are no indications of any important changes in the sales situation. General Motors are contemplating no change in their policy. Cadillac and LaSalle production is very small and can easily be provided from the Fisher plant. Mr. Higgins thinks that Ford has for the present given up all idea of using Safety Glass throughout. Mr. Higgins thinks that Hudson may be the next to adopt Safety Glass throughout and quotes the President of the Hudson Company as saying that, in his opinion Safety Glass should be required by law in all cabs and public conveyances.

* * * *

Defendant's Exhibit (DP) No. 171

59999

Excerpt of Addendum to Monthly Report of the President of the du Pont Viscoloid Company for August, 1930.

* * * *

We report as follows on the various accounts.

GENERAL MOTORS

At the present time are producing in Fisher Plant No. 1 laminated plate that is used in such models as Cadillac and LaSalle, and for optional equipment in other makes. Until they decide to use laminated glass more generally the Fisher plant will undoubtedly be able to supply their entire requirements.

PIERCE-ARROW

Continue to use Duplate exclusively throughout.

STUDEBAKER

Continue to use Duplate to the extent of about 90% of their requirements. The Libbey-Owens-Ford Co. will obtain about 10% of their business.

NASH

Have discontinued using laminated glass in their Kenosha models but are offering such for optional equipment in all models. So far have purchased only Duplate.

MARMON AND PEERLESS

Continue to use Duplate exclusively in the top models.

HUDSON

Continue to use Duplate in all windshields.

REO

Have decided to use Duplate and we understand will give us the bulk of their laminated glass business. While they are only using it in the top models they are likely to decide to use it in the lower priced models very shortly.

PACKARD & GRAHAM-PAIGE

Use Libbey-Owens-Ford laminated glass exclusively.

FRANKLIN

Have been using Safetee and Indestructo but are now considering a proposition from other companies. We hope they will be inclined to give us a portion if not all of their business but they are likely to purchase elsewhere if our competitors make a lower price.

BUS BUSINESS

We lost the Checker Cab contract on account of our competitors quoting lower prices than ourselves. Are supplying some of the smaller cab and bus manufacturers with limited quantities.

We estimate our shipments for the month of September at from 75,000 to 85,000 sq. ft.

AGREEMENT entered into this twenty-ninth day of January, 1931, by and between DU PONT VISCOLOID COMPANY, a corporation of the State of Delaware, hereinafter referred to as "Viscoloid Company", and PITTSBURGH PLATE GLASS COMPANY, a corporation of the State of Pennsylvania, hereinafter referred to as "Glass Company".

WITNESSETH:

WHEREAS each of the parties hereto is the owner of five thousand (5,000) shares (par value $100 per share) of the issued capital stock of Duplate Corporation, a corporation of the State of Delaware, engaged in the manufacture and sale of non-splintering glass in the United States and elsewhere; and

WHEREAS Duplate Corporation is indebted to Viscoloid Company on open account in the total sum of Five Hundred Fifty Thousand Dollars ($550,000), for moneys heretofore advanced from time to time by Viscoloid Company to Duplate Corporation for use as working capital; and

WHEREAS Glass Company desires to purchase and acquire from Viscoloid Company all of the latter's right, title and interest in and to the claim aforesaid, provided Viscoloid Company will assign, transfer and deliver to Glass Company, in consideration of the purchase by it of said claim, all of the certificates for the shares of the capital stock of Duplate Corporation owned by Viscoloid Company; and

WHEREAS Viscoloid Company is willing to sell and transfer all of its right, title and interest in and to the claim aforesaid, and to assign, transfer and deliver to Glass Company all of the certificates for the shares of the capital stock

of Duplate Corporation owned by Viscoloid Company, upon the terms and conditions hereinafter set forth;

NOW, THEREFORE, in consideration of the promises and the mutual agreements herein contained, the parties hereto have agreed, and by these presents

do agree, with each other, as follows:

I.

Glass Company hereby agrees to purchase and acquire from Viscoloid Company and Viscoloid Company hereby agrees to sell, assign and transfer to Glass Company, for the total sum of Two Hundred Twenty-five Thousand Dollars ($225,000), to be paid in cash or its equivalent, all of Viscoloid Company's right, title and interest in and to its claim of Five Hundred Fifty Thousand Dollars ($550,000) against Duplate Corporation; and it is further agreed that in consideration of the purchase by Glass Company of the claim aforesaid, Viscoloid Company will assign, transfer and deliver to Glass Company, without any further or additional consideration, all of the certificates, properly endorsed, for the five thousand (5,000) shares of the capital stock of Duplate Corporation now owned by Viscoloid Company.

Upon the assignment and transfer by Viscoloid Company to Glass Company for the claim aforesaid, and the assignment, transfer and delivery to Glass Company of all the certificates for the five thousand (5,000) shares of capital stock aforesaid, it is understood and agreed that Glass Company shall thereupon assume all obligations and liabilities of every character and description of Viscoloid Company due to or resulting from its ownership of said five thousand (5,000) shares of the capital stock of Duplate Corporation,

and/or due to or resulting from any suits, judgments, claims or demands whatsoever now pending or which may hereafter be entered against Duplate Corporation for or on account of any acts or conduct of the business of Duplate Corporation prior to the date payment is made under the provisions of Article III hereof, and in the event that any such judgments, claims or demands are not satisfied by Duplate Corporation, Glass Company agrees that it will satisfy any such judgments, claims or demands in full; and it is further agreed that if the total amount of any such judgments, claims or demands against Duplate Corporation shall not amount in the aggregate to the total sum of Five Hundred

Seventy-eight Thousand Dollars ($578,000), and Viscoloid Company shall be obligated to pay or satisfy any judgments, claims or demands against Viscoloid Company due to or resulting from its ownership of said shares of said capital stock, and/or due to its participation in any acts or conduct of the business or operations of Duplate Corporation, as a supplier of materials or otherwise, Glass Company shall reimburse Viscoloid Company on account of any such judgments, claims or demands against Viscoloid Company to the extent of the sum determined by subtracting from Two Hundred Eighty-nine Thousand Dollars ($289,000) one-half of the total amount paid by Duplate Corporation and/or by Glass Company in settlement of judgments, claims or demands against Duplate Corporation.

Example: Assume Duplate Corporation and/or Glass Company should be obliged to pay the total sum of $300,000 in satisfaction of judgments, claims or demands against Duplate Corporation, there would then remain a balance of $278,000, of which one-half, or $139,000, would be paid

by Glass Company to Viscoloid Company in the event Viscoloid Company should be obliged to pay or satisfy any judgments, claims or demands in that amount against it.

II.

It is further agreed between the parties hereto that a certain agreement entered into on December 14, 1927, by and between the parties hereto (which provided, among other things, for the organization of a corporation under the laws of Delaware to engage in the manufacture and sale of non-splintering glass), shall be terminated and canceled in its entirety upon the assignment, transfer and delivery by Viscoloid Company to Glass Company of the claim and the certificates for the shares of capital stock described in Article I hereof.

III.

It is further agreed that Glass Company will make payment to Viscoloid Company of the total consideration of Two Hundred Twenty-five Thousand Dollars ($225,000), specified in Article I hereof, not later than February 3, 1931, and that simultaneously with such payment, Viscoloid Company will assign, transfer and deliver to Glass Company all of its right, title and interest to the claim and the shares of capital stock specified in Article I aforesaid.

IV.

This agreement shall also be binding upon the respective successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the parties hereto, by their duly authorized officers, have caused this agreement to be

executed, in duplicate, and their respective corporate seals to be hereanto affixed, on the day and year first above written.

DU PONT VISCOLOID COMPANY

By .....
President.

Attest:

.....
Secretary.

PITTSBURGH PLATE GLASS COMPANY

By .....
President.

Attest:

.....
Secretary.

—5—

KNOW ALL MEN BY THESE PRESENTS:

That DU PONT VISCOLOID COMPANY, a corporation of the State of Delaware, in consideration of One Dollar ($1.00) and other valuable considerations, to it paid by PITTSBURGH PLATE GLASS COMPANY, a corporation of the State of Pennsylvania, the receipt whereof is hereby acknowledged, does hereby give, grant, bargain, sell, assign, transfer, set over and confirm unto Pittsburgh Plate Glass Company, its successors and assigns; all the right, title and interest of Du Pont Viscoloid Company in and to that certain open account or claim against DU-PLATE CORPORATION, a corporation of the State of

Delaware, in the total sum of Five Hundred Fifty Thousand Dollars ($550,000), for moneys heretofore advanced from time to time by Du Pont Viscoloid Company to said Duplate Corporation for use as working capital, to be held by said Pittsburgh Plate Glass Company as its own absolute property.

TO HAVE AND TO HOLD the same unto the said Pittsburgh Plate Glass Company, its successors and assigns, with full power and authority in the name of the said assignor, but at the risk, cost and charge and for the sole benefit of the said assignee, its successors and assigns, to sue for, recover and receive the debt and moneys hereby assigned and to give good and sufficient releases for the same. It is expressly understood, however, that Du Pont Viscoloid Company, the said assignor, is forever to be kept and saved harmless by the said Pittsburgh Plate Glass Company, the said assignee, from all cost or charge hereafter in any way or manner which may arise from the expense of collection of the sum or sums hereby sold and assigned.

IN WITNESS WHEREOF, said Du Pont Viscoloid Company has caused these presents to be executed by its President, thereunto duly authoriz-

ed, and its corporate seal to be hereunto affixed and attested this day of February, A. D. 1931.

DU PONT VISCOLOID COMPANY

By .....
President.

Attest:

.....
Secretary.

STATE OF
COUNTY OF } ss.

Be it remembered that on the day of February, A. D. 1931, before me ....., a Notary Public, personally came ....., to me known, who, being by me duly sworn, did depose and say, that he resides in .....; that he is ..... of DU PONT VISCOLOID COMPANY, the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

GIVEN under my hand this day of February, A. D. 1931.

.....

Notary Public.

My commission expires the day of , 19

NOTE: "WSGV.126.7" is handwritten in upper left corner, and illegible initials and "2/1/31. 126.7" in upper right corner of first page. On document page 5 "126.7" is written in upper right corner.

7
E

Defendant's Exhibit (DP) No. 173

4D-194

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

6008

February 3, 1931

ADVICE OF ACTION

Copy to:
Mr. W. F. Jensen
Mr. G. L. Naylor

Mr. C. K. Davis, President,
DuPont Viscoloid Company.

SUBJECT: SALE TO PITTSBURGH PLATE GLASS COMPANY OF DU PONT VISCOLOID COMPANY'S INTEREST IN DUPLATE CORPORATION:

ACTION TAKEN BY: Finance Committee

AT MEETING: February 2, 1931

REMARKS:

Reference: Executive Committee action of January 28th, 1931, on the above subject:

It was moved and unanimously carried that the Finance Committee concur in the Executive Committee's approval of the action taken by the Board of Directors of DuPont Viscoloid Company on January 27, 1931, regarding sale of that Company's interest in Duplate Corporation to Pittsburgh Plate Glass Company.

M. D. Fisher,
Sec'y Finance Committee

8.

Defendant's Exhibit (DP) No. 174

DUPLATE SHIPMENTS - FEET AND DOLLARS
TO GENERAL MOTORS CORPORATION AND SUBSIDIARY COMPANIES
YEARS 1928 TO 1931, INCLUSIVE

6009

Period	TOTAL		FISHER BODY CORP.		CADILLAC MOTOR CAR CO.		GENERAL MOTORS TRUCK	
	Feet	Dollars	Feet	Dollars	Feet	Dollars	Feet	Dollars
1928								
Jan.	-	-	-	-	-	-	-	-
Feb.	-	-	-	-	-	-	-	-
Mar.	-	-	-	-	-	-	-	-
Apr.	-	-	-	-	-	-	-	-
May	1,377	$ 2,581	1,377	$ 2,581	-	-	-	-
June	100	187	100	187	-	-	-	-
July	69,681	130,983	69,681	130,983	-	-	-	-
Aug.	125,876	235,913	125,876	235,913	-	-	-	-
Sept.	142,686	267,439	142,686	267,439	-	-	-	-
Oct.	180,435	338,214	180,358	338,021	77	$193	-	-
Nov.	82,182	156,283	82,100	156,078	82	205	-	-
Dec.	12,509	23,460	12,509	23,460	-	-	-	-
1928-Year	614,846	$1,155,060	614,687	$1,154,662	159	$398	-	-
1929								
Jan.	93,760	$ 177,607	93,760	$ 177,607	-	-	-	-
Feb.	70,974	134,064	70,974	134,064	-	-	-	-
Mar.	73,885	138,753	73,885	138,753	-	-	-	-
Apr.	36,232	68,531	36,232	68,531	-	-	-	-
May	39,647	75,481	39,647	75,481	-	-	-	-
June	9,100	17,106	9,100	17,106	-	-	-	-
July	27,987	52,712	27,987	52,712	-	-	-	-
Aug.	137,755	259,757	137,755	259,757	-	-	-	-
Sept.	108,944	204,775	108,944	204,775	-	-	-	-
Oct.	74,766	141,007	74,766	141,007	-	-	-	-
Nov.	38,435	72,359	38,435	72,359	-	-	-	-
Dec.	907	1,605	907	1,605	-	-	-	-
1929-Year	712,472	$1,343,757	712,472	$1,343,757	-	-	-	-
1930								
Jan	4,303	$ 8,032	4,303	$ 8,032	-	-	-	-
Feb.	1,006	1,897	1,006	1,897	-	-	-	-
Mar.	1,337	2,221	1,271	2,095	-	-	66	$126
Apr.	65	97	-	-	-	-	65	97
May	671	1,117	628	1,052	-	-	43	65
June	1,012	1,654	1,012	1,654	NA	NA	NA	NA
July	8,476	15,605	8,476	15,605	NA	NA	NA	NA
Aug.	6,977	13,837	6,977	13,837	NA	NA	NA	NA
Sept.	8,934	16,449	8,934	16,449	NA	NA	NA	NA
Oct.	2,878	6,907	2,878	6,907	NA	NA	NA	NA
Nov.	-	-	-	-	NA	NA	NA	NA
Dec.	51	72	51	72	NA	NA	NA	NA
1930-Year	35,710	$ 67,888	35,536	$ 67,600	-	-	174	$288

3814

6010

DUPLATE SHIPMENTS - FEET AND DOLLARS
TO GENERAL MOTORS CORPORATION AND SUBSIDIARY COMPANIES
YEARS 1928 TO 1931, INCLUSIVE

Period	TOTAL		FISHER BODY CORP.		CADILLAC MOTOR CAR CO.		GENERAL MOTORS TRUCK	
	Feet	Dollars	Feet	Dollars	Feet	Dollars	Feet	Dollars
1931								
Jan.	1,661	$ 3,058	1,661	$ 3,058	NA	NA	NA	NA
Feb.	2,939	5,411	2,939	5,411	NA	NA	NA	NA
Mar.	3,834	7,058	3,834	7,058	NA	NA	NA	NA
Apr.	2,786	5,128	2,786	5,128	NA	NA	NA	NA
May	2,556	4,705	2,556	4,705	NA	NA	NA	NA
June	3,067	5,646	3,067	5,646	NA	NA	NA	NA
July	-	-	-	-	NA	NA	NA	NA
Aug.	2,556	4,705	2,556	4,705	NA	NA	NA	NA
Sept.	358	665	358	665	NA	NA	NA	NA
Oct.	-	-	-	-	NA	NA	NA	NA
Nov.	-	-	-	-	NA	NA	NA	NA
Dec.	-	-	-	-	NA	NA	NA	NA
1931-Year	19,757	$ 36,376	19,757	$ 36,376	-	-	-	-
Total 1928-1931	1,382,785	$2,603,081	1,382,452	$2,602,395	159	$398	174	$288

Notes: (1) Shipments are stated gross (before returns, adjustments and allowances).

(2) N. A. indicates data are not available.

(3) Sources of data - Triplex Corp., Patent Infringement Suit Workpapers and Pittsburgh Plate Glass Sales Ledgers.

6/20/52

T.J.T.

3815

Defendant's Exhibit (DP) No. 175

6011

RICHARD C. WILLIAMS

POSITIONS HELD IN E. I. DU PONT DE NEMOURS & CO.

1917 TO DATE

Date	Position	Location
August, 1917.	Chemist, du Pont Experimental Station	Wilmington, Delaware
1918	Supervisor, Chemical Department	Parlin, New Jersey
January, 1923	Duco Demonstrator	Detroit, Michigan
January, 1925.	Assistant Manager, Automotive Sales	Detroit, Michigan
May 1, 1943 .	Manager, Automotive Sales	Detroit, Michigan

3816

Defendant's Exhibit (DP) No. 176

6012

FINISHING PRODUCTS USED IN AUTOMOBILE PRODUCTION

Bonderite (or Solvent Cleaner)

Primer

Dip primer for sheet metal
Spray primer for bodies

Putty glaze

Surfacer

Primer-Surfacer

Sandpaper

Topcoats (lacquer or enamel mixed with thinner)

Rubbing compounds

Chassis enamel

Motor enamel

Miscellaneous lacquers and enamels for small parts

Interior enamels

Insulating Varnish

Cable lacquer

Body sound deadener

Defendant's Exhibit (DP) No. 177

6013

REPORT OF VISIT TO GENERAL MOTORS RESEARCH LABORATORY, DAYTON, OHIO.

3/28/1922.

The General Motors research men being entirely unfamiliar in handling our materials, as well as not having done spray work, it was necessary to spend some time in teaching one of their chemists to familiarize himself with such in order that they may continue their experimental work in our absence.

The material selected for our work was black sheet metal used by the manufacturers as body metal.

In order to find out whether it was necessary to prepare the metal in any way before spraying, the General Motors arranged a series of plates as follows:

All plates were washed in gasolene. Each series included 1 plate 14'' x 24'' and 3 plates 4'' x 12''.

1.—Metal scuffed with sandpaper.

2.—Metal thoroughly roughed with sandpaper.

3.—Bare metal as received.

These were sprayed in our standard way: 1 coat of 93002 sprayed lightly as an intermediate, 3 coats of enamel, and rubbed smooth with pumice and water. In each case the large plates were finished with MS/296 and the small ones with MS/295.

On drying the plates were tested for adhesion, 1 & 3 being very unsatisfactory, while 3 with roughed metal held fairly well. Here the subject of improper cleaning came up,

3818

and Mr. Flaherty suggested washing the metal in hot KON. This was done and a standard finish gave us a very satisfactory finish from the adhesion viewpoint, and it was this point they seemed most interested in.

They desire, however, to use a priming coat that will give a satisfactory adhesion without treating the metal chemically previous to spraying.

On clean metal they requested a primer of clear lacquer free from Silex, as in using Silex a sanding operation will be necessitated and this would be prohibitive from a cost viewpoint.

A number of finished plates were given a flow coat of Murphy's finishing varnish and held for durability results. They consider this the first possibility: Our standard finish to the point of buffing followed by a coat of varnish. Likewise, they consider buffing provided the labor cost is not prohibitive and they are able to obtain a satisfactory gloss.

—2—

They requested a clear lacquer be attempted after rubbing to restore the lustre.

In order that they may be in a position to buff, they requested us to buy what equipment was necessary for this work. This the writer did in Philadelphia and same will go out this week with directions as how same should be set up and used.

All plates finished by us were put to wear test, being placed on the roof at 45° angle facing the south. Another test they were interested in was the effect of gasolene and kerosine on our material. To determine this, plates were cut up and placed in beakers and covered with gasolene or kerosine. At the end of a week, no effect was noted.

Mr. Mougey outlined the work to Mr. Flaherty that he thought we should attempt at the factory and feeling satisfied that we had familiarized them in handling our material, the work was concluded temporarily.

We visited the Delco Light Plant and arranged to finish a Frigidaire box in our VS/1 at some future date.

R. C. WILLIAMS

RCW/JJL

NOTE: Upper right corner numerals 137.

Defendant's Exhibit (DP) No. 178 6016

REPORT OF R. C. WILLIAMS TO GENERAL MOTORS COMPANY

5/4/1922

A visit to the Buick Plant was made by Mr. Mougey, of the General Motors Research Corporation, and the writer. We discussed the work we had done in connection with the Research Laboratory, and Mr. Weeklen (*Weckler*) (Works Engineer) did not think it advisable to wait longer for panel test, but felt the best method of checking durability would be to spray a couple of bodies, which would be assembled and washed often. He felt that in such a manner a year's results could be obtained in six months.

We were reluctant, however, without discussing the proposition with Mr. Flaherty. On meeting Mr. Flaherty in Dayton, the proposition was gone over, and it was agreed that 3 bodies should be finished as follows:

1—sandblast, 3 coats MS/295—rub.
2— " 3. " " plus additional light coat MS/295.
3— " 3 " MS/296—finishing varnish.

On arriving at the Buick Plant, the bodies were prepared (sandblast), and the 3 coats of MS/ enamels applied as outlined. MS/296 did not cover well. The General Motors authorities doubted the probability of applying our material over sandblast directly, due to defects in the metal that could only be taken care of by filler or under coats. This, however, was not discussed fully as the primary object was to get the durability tests.

3821

At the end of the 3d coat, the bodies were allowed to air dry over night and rubbed down.

The two bodies sprayed with MS/295 looked very good, while the MS/296 needed additional coats to get covering power. At this stage, Mr. Brown, who under Mr. Weeklen (*Weckler*) has control of all paint work, brought out that it would be necessary to use rough stuff (under coats) in order to obtain a smooth surface, and felt it was unnecessary to continue the work started over sandblast surface. However, as Mr. Weeklen (*Weckler*) had sanctioned the work as started, it was decided to send the two bodies in MS/295 thru as planned originally and stop the work on the MS/296 body.

Mr. Weeklen (*Weckler*) and Mr. Brown then requested we use the remaining material over one of their bodies with rough stuff. This we were reluctant about, explaining that our experimental results had proven that adhesion over similar materials was not as good as desired, and we would rather not attempt such without first checking up our laboratory tests. They insisted, however, and said ∧ it was *if* not done by us

—2—

Visit to General Motors Co.

they would request the material and conduct a few experiments on such lines. We then agreed to try same, at the same time not being responsible for the results obtained.

3 coats were applied, a mixture of MS/295 and MS/296, on a roadster type body. The material flowed out well, leaving a very smooth surface. They seemed satisfied when we left that the adhesion would be all that was desired.

The foreman of the shop told us before leaving that his orders were to send the 3 bodies thru as follows:

1—Touring in the water rub state.
2— " final coat of finishing varnish.
3—Roadster hand rub.

The Research Laboratory at Dayton will be kept posted as to any test that are made on the bodies and results of wear tests. The entire Buick organization visited seemed to be well pleased with the toughness of our material and feel the possibilities of using same are good.

RCW/JJL

NOTE: "137" in upper right corner. Handwritten "if" inserted on bottom line of first page. Italicized names in parentheses indicate correct spelling.

Defendant's Exhibit (DP) No. 179

August 16, 1922.

REPORT OF THE WORK BEGUN AT THE BUICK PLANT FLINT, MICH. JULY 18, 1922.

Messrs. Hitt, Flaherty, Hinze, Mougey and Williams visited this plant on the above date and outlined the work to be done on Buick bodies using our MS enamels.

The defects in the metals, the methods of preparing the bodies, the number of coats necessary, and any deviations from our regular procedure in order to obtain a suitable body, are outlined in the following report.

Each body is taken individually and assigned a number—the number is shown just inside the cowl in red enamel, where it can readily be observed. A record of all bodies will go on file. In this work the greater part of our work was done with the MS2/ enamels, however, it was necessary to use the MS/ in some cases as noted in this report.

Rather than use the cup method of spraying, our enamel was made up in quantities and placed in a reservoir in the ceiling and fed to the spray gun by gravity, in using this method a greater pressure was obtained, hence much heavier coats were applied, than in ordinary spray work. The proportion for thinning was 9 parts of MS2/8 enamel to 5 parts of 85882 thinner.

Body #1.

Model and type—45—touring.
Preparation—Sandblasted.

Inspection—Edges of doors unblasted, top rail at rear

of right rear door unblasted. Remainder of body blasted too deep, making rough surface.

This body was not rejected, however, as it was the only one that could be obtained within a period of twenty minutes and in that time the Cadillac visitors at Buick on that date wished to see a coat of our material applied.

Two coats of our MS2/8 were applied. On drying the enamel peeled in places unblasted as pointed out. These places were patched in our regular way and adhesion was satisfactory. (It is true that when our material lifts once it carries grease and dirt and on second application, adhesion will be O.K.).

Body was rubbed out using pumice and water, sandpaper being necessary in places due to rough surfaces from heavy sandblast. All rubbing operations were done by Buick rubbers.

—2—

Third coat (double) MS2/8; rubbed, effect of sandblast still showed. A double coat indicates one sprayed right over the other, not allowing drying between coats.

Body rubbed out with pumice and water, effect of sandblast still present.

Fourth coat applied, rubbed, inspection at this point, satisfactory, metal well filled and surface smooth.

Finish—Buick stripe—finish varnish.

Body #2

Model and type—45—touring.

Preparation—Sandblast, followed by Buick Primer and rough stuff and rubbed.

INSPECTION—Dents in the body, these were bunped out by Buick. A number of small holes in the metal on right rear door showed through the rough stuff coats.

Two coats MS2/8, rubbed. The bad spot in right rear door glazed with our special glazer, sanded and patched—very satisfactory.

Third coat MS2/8 rubbed. This body was to remain in a dull finish or semi-gloss. A very light coat of our two to one VSC and MS2/8 was applied, this did not improve the lustre to any noticeable extent, however, as one-half of the bodies were to go in a dull finish it was sent to the assembling room in this finish. Surface smooth and well covered and satisfactory from all angles.

Body #3.

Model and type—45—touring.
Preparation—Sandblasted.

INSPECTION—Body rejected due to unsandblasted places on rails around top of body, edges of doors and under fender parts. Resandblasted and accepted. Note bad spot in metal on the rear where the back and side join near the top. Double coat of MS2/8.

Surface rough due to sandblast and bad spot on back glazed with our special glazing dope, brushed smooth with 85882 and rubbed.

Four coats of MS2/8; this was necessary to fill the sandblasted metal, rubbed.

Finished with a very light coat of VSC and MS2/8 at a ratio of two to one as in body #2. Surface not as well filled as in body #2 over rough stuff. Accepted and sent to assembling room in dull finish.

Body #4.

Model and type—45—touring.

Preparation—Sandblasted—Buick primer and rough stuff—rubbed out.

INSPECTION—Good—This was the most satisfactory body received up to this time.

Two coats MS2/8, rubbed.

One coat MS2/8, rubbed.

Finish—Buick Stripe—Varnish.

Bodies #5 and 6.

Model and type—44—Roadster.

Preparation—Sandblasted—Buick primer and rough stuff.

INSPECTION—Two bodies, both in good condition accepted after being bumped out. These bodies were sprayed to carry out Mr. Weekler's (*Weckler's*) (works engineer) idea of putting two finishes on one body. A line was drawn down the center and on the left side of body 5 and right side of body 6, we applied three coats of MS2/8. The Buick people were to bring up the vacant sides and rub and varnish. On our last day we examined these bodies and found that ground coats only had been applied at that time. Mr. Prohl, (*Prahl*) however, will furnish us with the remaining details.

Body #7.

Model and type—45—touring.

Preparation—Sandblasted.

INSPECTION—Well sandblasted—no places noted in bad condition. Entire surface glazed by one of Buick's experienced glazers using our special glazing compound. He complained it set up a trifle fast, but otherwise it worked very satisfactory. This was allowed to dry over night and sanded. Surface good.

Three coats of MS2/8 applied and rubbed.

Finish coat—3 pts. VSC—1 pt. MS2/8. This gave a better lustre than was obtained on the other dull cars, and a very satisfactory finish. This was the smoothest surface obtained including all cars. Body was sent to assembling room in this finish.

Body # A—55.

This was a special job for a friend of Mr. Durhams. Sport model, brought up with Buick primer and rough stuff. Our MS/326 Maroon was used. Three coats were applied and rubbed and two more coats applied. We left the body in this state to be rubbed, striped and varnished. We experienced poor covering power with this enamel having to build in places where metal showed through rough stuff.

Body B—49—2 passenger.

This body was the property of Mr. C. D. Smith a Buick official and had been refinished several times. As much of the old paint as possible was removed and brought up with rough stuff. The surface was not as smooth as desired, defects in the metal showing through the rough stuff, however, our enamel eliminated a number of these.

Two coats of MS/325 were applied and rubbed out.

Two coats applied and rubbed out and striped and varnished. We saw this a finish job and it compared favorably with the Buick new job and was satisfactory to all concerned.

Body—C—45—touring.

This body was brought up with primer and rough stuff and was to be finished in MS/672, and will be the property of Mr. Brown of Buick. We taught a man taken on by Buick for this work, the application of our material and the handling of a spray gun and he was doing the work on this body. On leaving, two coats had been applied and the job seemed very satisfactory at that time.

All hoods were done to match the bodies and numbered accordingly. The metal in each case was etched and three coats applied, rubbed and left in a dull finish or to be varnished. All bodies in numerals have MS2/ enamels.

Bodies in letters have MS enamels.

R. C. WILLIAMS.

RCW/AFM

NOTE: "137" in upper right corner. Arrow points to word "rough" on fourth page. Third paragraph of fourth page enclosed in parentheses. Italicized names in parentheses indicate correct spelling.

Defendant's Exhibit (DP). No. 180 6025

Letterhead

Direction of
UNITED HOTELS
of America

THE DURANT
FLINT, MICH.

Thus., 10/12/22

Dear Mr. Hitt:.

My wire of to-day gives a general line of progress to date.

Twenty of the bodies are in this stage.

1st Coat Duco 1292—2d coat 50% Duco 1292; 50% MS/672. These were washed in gasolene and dried. Adhesion good. Between coats the high spots, such as dust that came from the air were knocked off with sand paper —probably only two or three minutes time required on each. These 20 now await 3d and last coat of MS/672 which

—2—

apply tomorrow. In addition the hoods have received one coat Duco 1292. Five remaining bodies will be started tomorrow. I'm breaking in a man & will let him do these under my whip. Incidentally, I sprayed the 1st coat on the 20 bodies in 4½ hrs.: & pulled them away when finished.

Mr. Knudsen blew in this a.m. & asked to see the jobs —after seeing the two coat jobs, asked for a third. We finished one up & he said he'd return after lunch to see it — & believe me he was there at the time stated. He was.

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very much pleased and asked that all be completed and assembled as soon as possible as they were

—3—

already sold in the Detroit district.

Mr. Wettrend's car will be cleaned tomorrow—had a talk with him today — & he suggested that the man I'm breaking in finish his as he thought it would be good experience. McQuaid (*MacQuaid*) thought this a good idea and I'll outline the procedure.

I spent an hour at Buick late this P. M. They are rushing panels that I'll bring back in their colors, and Mr. Weckler asked that we match these and I return as

—4—

soon as possible. The cars to be finished there will be production jobs as per Mr. Durham's orders. They are sold at last and have petitioned off a room to work in, all equipped with good light, air, ect. Saw three of our jobs and they *do look good*—free from checks or deterioration of any nature—under varnish they are beautiful. Brown, the "bird" that fought us was so nice it was hard to realize it was the same man. His black job is improving so he welcomes the day we return to do more. Mr. McQuaid (*MacQuaid*) feels confident that Duco will be substituted for color varnish at

—5—

Buick & says if he was there it would be in effect now.

Buick is making 722 cars a day and after all I believe we'll get in production there first. Prahl told me today that he felt sure it was coming & welcomed the day when

Durham says "Mullen Duco in place of color varnish." I too would love to be present when old Mullen gets that.

The entire Flint Varnish Organization watched me spray the Chev bodies this A.M. and asked

numerous questions. I tried to be courteous, but gave no information.

The Chev men have resorted to all methods to try to peel some of our jobs, but Duco holds fast.

Mr. McQuaid (*MacQuaid*) introduced me to a little polka party last eve & I let him know the Parlin boys are well versed by coming out $7.00 up.

Please tell Cal. what I've done here, as I don't want him to feel that I'm going over his head by writing you direct. Have some work for me when I return.

Respectfully,
RED.

P.S.—Tell Al Burke (*illegible*) here O.K.

NOTE: Handwritten document. At upper right hand corner of first page are numbers 903.14. Italicized names in parentheses indicate correct spelling.

Defendant's Exhibit (DP) No. 181 6028

Letterhead of

DU PONT FABRIKOID

E. I. DU PONT DE NEMOURS & COMPANY

(Incorporated)

WILMINGTON, DELAWARE

SALES DEPARTMENT

Copy—J. J. Moosmann, Director of Sales

Attention, Mr. E. M. Flaherty

March 17, 1923

Mr. J. W. Elms—

Attention: Mr. M. V. Hitt

SUBJECT: AMERICAN WOOD RIM COMPANY
Onaway, Michigan

Spent three days with this concern assisting them in the use of our Viscolac on Steering Wheels. Interviewed here Mr. Kendrick, General Manager, Mr. Lobdell, Jr., son of the President and Mr. Lockwood, Superintendent of Finishing.

Found these men all very open minded, but the "show me" type. In other words if we could show them a more durable finish in a shorter time than their present schedule, which is eight days they gave the impression that they would in time go over to our product entirely. They insist however, that our materials of different shipments must not lack consistency and uniformity in any way. They object very seriously to the odor of our clear 1699, which is indeed very objectionable and it was my understanding some time ago that we would not have this to cope with any

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longer; and I hope the shipment you are now preparing will not carry this lasting and disagreeable odor.

All Franklin wheels will be coated in the future with our materials and the American Wood I feel will gradually go to our products on all production as they gain familiarity with the use of same and have time to note its superiority.

Kindly furnish me with the method used in finishing the inlaid portion of the Franklin spider. It is impractical to finish these from a production view-point by spray and I'd like to know the exact procedure we followed at our laboratory in coating the one's for Franklin, so I may furnish the American Wood Rim with. the information.

We coated a number of wheels following the procedure used by Parlin in finishing the wheels sent them by this concern. The time of drying was however shortened by us here some what due to the factory conditions, principally because of their over capacity.

We experienced no sinking effect; obtained good adhesion, but

it necessitated three coats to get a satisfactory build. It is my experience that VSC 1618 is superior to 1699 in this respect and request we furnish them with 1618 on their present order.

You will no doubt note the 50 gallon order for Duco 2442. While working in their factory I noted a number of Black wheels going through and sought information on how they were finished. Found the materials and procedure almost identical with finishing an auto body. Further inquiries disclosed the fact that this finish caused them the most

grief, so suggested our 2442. Not having 2442 available I gave them an idea of our black by coating a couple of wheels with 2672. They were so pleased with the results obtained except for body that I convinced them that our 2442 was what they needed. The fifty gallons will afford sufficient material to give them a further insight into the merit of our product and as they desire a dull finish in black wheels, I feel we will immediately obtain this end of the finishing entirely.

The American Wood has a production of 4000 wheels per day which they anticipate doubling. This means a mighty fine account which is within our grasp, if we will co-operate with them in the manner expected. I request their shipment be made as soon as possible. Before leaving this plant I broke in a foreman in the use of air guns and the use of our materials with same.

American Wood Rim order should read.

50 gallon VSC 1618
50 " Intermediate 1639
100 " Thinner 3600
50 " Duco 2442 in 5 gallon cans.

SUBJECT: OAKLAND MOTOR CAR CO.
Pontiac, Michigan

Received an urgent call to come to Pontiac on my arrival today. Interviewed Mr. Rogers and he is dissatisfied with the shade of our Duco 2442 Black. He claims the bluish cast is destroyed when rubbed, bringing out a purpleish or reddish cast, which when under varnish is not a true black. He is correct in his statement, in that it is not a true black when varnished. We note in direct sun-light it is decidedly purpleish.

Mr. Rogers requests us to ship him immediately the following

1 gallon Black as free as possible from cast described
1 " 2442 with ½ our present pigment content
1 " Blue 24434

As you know the Oakland authorities have worked diligently and quietly on Duco and have surpassed all other units in accomplishments. Just what their idea is in wanting these materials in such haste I am unable to say. I do know however, that more cars than we have known about have gone out at this factory and from general conversation with the different Oakland authorities, it is essential that we get at least the 2442 with ½ the pigment content and the 24434 off immediately; and follow with the truer black as soon as possible.

The results have indicated that these people are more interested than ever and in view of the fact that Mr. Rogers makes this request it MUST be granted at this time. Regards of what he asks give it to him now, even tho his requests may not be in accordance with our ideas. He is extremely anxious to have these tests out in less than ten days. Furthermore he requests all of his materials fall between 15 degrees and 20 degrees Bé useing a Light liquid hydrometer for mineral oils—Temperature 60 degrees F.

SUBJECT: GARBER-BUICK COMPANY
Saginaw, Michigan

On March 9th and 10th, Mr. Groff and the writer demonstrated Duco as a refinish proposition to the above concern. The body a Buick roadster had been roughed pre-

viously to our arrival. It air dried six days. Three coats of Duco 2442 were applied, air dried over night, and rubbed. The body is to be finished in wax. No fender work was done. We succeeded in obtaining some interest here from Mr. Grevia, Foreman and feel we should develop an account.

R. C. WILLIAMS.

RCW:JPT *Red*

NOTE: Mr. Callahan crossed out in upper left corner; 277, 291 crossed out in upper right corner. Other illegible numerals in upper right corner. Mr. MV Hitt is checked at top center. "Still using gum until gone" is written in right margin. Third paragraph checked. The figure 1639 on second page is illegibly changed. 2442 is circled at bottom of second page. Handwritten "make up Spec. Duco" circled in left corner of last page. 2442 written at bottom of last page followed by (575 base) on lowest limits. Italics indicate handwritten signature.

Defendant's Exhibit (DP) No. 182

6033

June 14, 1923.

VISIT OF R. K. CATHCART TO
H. H. FRANKLIN MFG. CO.
SYRACUSE, NEW YORK

A visit was made to this plant to explain methods of polishing Duco and the best way to remove smut marks left on the surface from sandpapering.

Mr. Lewis, Paint Engineer of the above concern seemed very well pleased with what was shown him and said he had been working quite industriously for the past two weeks endeavoring to run down a suitable method of polishing.

The above concern has switched the entire plant back on rubbing with pumice stone, felt and water. This, I believe, will help a whole lot on obtaining a smooth surface. They have been using sandpaper and water.

The biege Duco received by Franklin was satisfactory and they were getting some demi-sedan bodies ready to shoot.

At present this firm's painting department is quite upset owing to a change in ovens, spray booths and rubbing decks, in order to be able to handle steel bodies. Steel touring bodies are now being received by them.

R. K. CATHCART.

RKC/AFM

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E

P16

Defendant's Exhibit (DP) No. 183 60334

Letterhead of

DU PONT
E. I. DU PONT DE NEMOURS & COMPANY
(Incorporated)
Dime Savings Bank Building
Detroit, Michigan

SALES DEPARTMENT

Aug. 13, 1923

Mr. J. J. Moosmann:

Attention: Mr. Flaherty

Report week ending Aug. 11th, 1923.

OAKLAND MOTOR CO.

You are aware of the difficulties we are experiencing at this concern with our 34 blue. The Oakland Motor Company is in production about ten cars going through per day. No difficulty is encountered at this writing with Newport blue but 34 is certainly not up to standard.

After Rogers had exhausted all means of getting a 100% job with 34 blue, he took the matter up with Mr. Orr and told him he felt the DuPont Company had put it over on him. Mr. Orr called me in and after a lengthy discussion he asked Mr. Elm to come out in order to settle the situation once and for all.

While Phillipp's analysis may be incorrect, there is surely "A negro in the wood pile somewhere." Inasmuch as it is necessary to thin the 24434 down so far to obtain spraying consistency and the old 340 sample can be used almost as

received, makes the problem look as if the difficulty may be in the Viscolac used rather than the mill base. We are unable to produce results even with three coats. This, however, may be accomplished if rubbed between coats.

Thinned to spraying consistency we find a decided lack in hiding power. Where bare metal spots are evident, it is necessary to spot spray every one, and on the present bodies, these spots are numerous.

I assure you that we have done everything, even vary the undercoats and believe you will agree it is to our advantage as much so as to Oakland's to put out 100% jobs. The defects would not be noted by the casual observer, but every Automobile Manufacturer and paint man is out to kill or pick flaws in the usual departure. This is one reason for wanting the best that we can get and we have had it in the old 340.

We feel upon Mr. Elm's arrival and conference with Mr. Orr, some agreement can be made where satisfaction will be for all.

FISHER BODY CORPORATION

I have spent a lot of time chasing Breslin around the various

J. J. Moosmann #2

Fisher plants and find our products will be found useful at some of the Fisher Plants in the near future. At Cleveland and St. Louis apparatus is being installed for the use of Duco and Viscolac on all Chevrolet mouldings. We should have these in operation in a few weeks.

At the Detroit plants, Mr. Hurley has assumed charge and on Cadillac mouldings where 1640 and 1618 were being used

followed by one coat of varnish, he has discarded for the present. He is not enthusiastic about Viscolac and overlooks durability and places superiority in finish above everything. He claims mouldings finished as follows are superior in looks to anything they have tried and at the same time creates a saving worth consideration:

1 Coat 1610 Over filler
3 " Varnish

The mouldings are equally as good in looks as if 1618 were used in place of two coats of varnish. Mr. Hurley states however, this is only a temporary arrangement and is willing to conduct some experiments along with his present procedure. On bodies, he feels Duco has a lot of merit and while they are not planning any immediate deviation in in finishing schedule, he says the Fisher officials are watching the bodies in this vicinity with particular interest, and they will be guided a great deal by Oakland's success or failure.

CADILLAC MOTOR COMPANY

Mr. Priebe is anxiously awaiting the samples coming and plans putting out a number of cars if samples submitted prove satisfactory.

CHEVROLET MOTOR COMPANY

Two cars are in the process of finishing with our 399 Dust Proof Gray. Mr. Knudsen of Chevrolet is responsible for having these bodies done and as near as I can determine, on the outcome of these depends whether we get the export business or not. Cathcart is conducting this work. I examined the bodies after being sprayed and in the process of rubbing and they looked very good and I feel they will polish

up in a very satisfactory way. We were delayed a day getting started due to the primer coat not being thoroughly dry upon our arrival. Work should be complete today after which cars will be assembled and shipped to Detroit for Mr. Knudsen's inspection.

BUICK MOTOR CAR COMPANY

Unable to locate Mr. Weckler to find out Buick's plans for the year.

J. J. Moosmann #3

GENERAL MOTORS EXPORT

Wrote Mr. Daniels, Superintendent here that it would be necessary to postpone work there a few days due to pressing engagements with General Motors Corporation here. This arrangement is satisfactory and we will go here two weeks hence, after Mr. Daniel's vacation.

STUDEBAKER CORPORATION

Arrangements have been made to finish the 3 bodies in South Bend, Indiana this coming week. Brown is available for the work and I'll not accompany him down but plan to see the work sometime during the progress for one day.

LINCOLN MOTOR COMPANY

Exact date unsettled but hope to complete same by end of week ending August 20th.

COMPETITIVE

Sending samples of Glidden Black and thinner. Will ask Groff to get details of Nicholas product as it has been tried

at Maxwell. Acme has sample of clear material at Fisher. Will attempt to get same for the laboratory. Looks like a gum proposition.

R: C. WILLIAMS

RCW:LJ

Red

NOTE: *1568* and RC Williams in upper right corner. At bottom of second page Gocheler is deleted and Weckler is inserted. At Maxwell is inserted in second line of last paragraph of last page. Italics indicate handwritten signature. Letters "EF" appear on right hand margin of each page.

Defendant's Exhibit (DP) No. 184 6(033)

Letterhead of

DU PONT FABRIKOID
E. I. DU PONT DE NEMOURS & COMPANY
Incorporated
230-231-232 General Motors Bldg.
DETROIT, MICHIGAN
SALES DEPARTMENT

Friday 4:30.

Mr. Flaherty:

Just came from Ternstedt where am going after Duco on wind-shield frames. Am going to have Dolan finish some there—means from 3 Barrels up per week and feel should be able to get it. Hope this will meet with your approval. As long as it is so close to Bodies & Fisher felt I was not getting out of my territory.

Red

For your information following are concerns and status:

Cadillac Awaiting colors originally submitted June 28.
Lincoln " " recently "
Ford Using 244412 Black on trucks over baked primer.
Buick Putting thru a number of Exp'l cars in colors.
Oakland Planning 125 open jobs per day. 2 cars 526. 1 car 418.
Oldsmobile Using weathered Bronze on open sport models.
GMC Truck awaiting Fawn gray.
" Refinish Finishing a car a week.
" Export Oshawa Exp'l—will visit in Dec.
" " Australia See A. K. Mearns.
Chevrolet Planning to use on Exports.

3844

6040

Hupmobile Awaiting samples—plan putting some cars in trade.

Paige Demonstration now near completion.
Amer. Auto Trim Demonstration now near completion. } Dolan

Maxwell See Chalmers

Overland Simon Sales—not equipped to handle Duco.

Fisher Body # 9 Det. Plan Exp'l work on Buicks.
" " Pontiac—Running 60 closed bodies per day.
" " Cleveland. All instrument boards and mouldings.
" " St. Louis. All instrument boards and mouldings.
" " Flint. All instrument boards and mouldings.

—2—

Wilson Body—Demonstration started.

Dodge—Two bodies now on exp'l tests.

Velie—One body recently done, much pleased.

Rickenbacker—Have not yet called.

Studebaker—Want further demonstration.

Moon—Will visit while in St. Louis in Dec.

Marmon—Will visit while in St. Louis in Dec.

Morris—Will visit while in St. Louis in Dec.

Chalmers—Fine job—412 complete. Others planned.

Reo—One car on exp'l tests. No recent remarks.

Lawson Body—Demonstration now on Lincoln Body — Dolan.

Widman Body—Have not called.

Amer. Wood Rim—Using 412 Black.

Packard—Nothing new.

Thought you would like to have this.

Red

3845

—4—

Fri. 4:45

Mr. Flaherty

Nickerson of Hupp says if Blue is shipped Monday as per wire to-day—We are exonerated—Otherwise he is off us for life. You know the other colors do not have to be exact matches, so can't we hasten it up a bit. I was advised 10 days ago that these would be shipped Sat. Nov. 10th.

Red

Hold Ford orders for
2000—412 in fives until advised.
2000 3601. Had a battle on price
but got it 4.10 and 2.25

R.

Note: Handwritten letter. 1568 and "Stamped Rec'd Nov. 19, 1923" handwritten in upper right corner. "EF" stamped on each page.

Defendant's Exhibit (DP) No. 185 6042

Letterhead of

DU PONT FABRIKOID COMPANY
Incorporated
Manufacturers of
ARTIFICIAL LEATHER

SALES DEPARTMENT

Wilmington, Delaware

December 3, 1923

J. J. Moosmann, Director of Sales

Attention: E. M. Flaherty

Report ending week of December 1, 1923

FISHER BODY CORP.

The most interesting and incidentally profitable progress made in the territory in the past few weeks has been with the Fisher Body Corp. You through my recent reports have learned that all Fisher plants where Chevrolet Motor cars are manufactured are using our 412 Black on instrument boards and windshield frames and some black and 1610 on mouldings. Cleveland is the distributing agent for the following plants: Flint, Janesville, Buffalo and Norwood Cincinnati. At the Cleveland plant on my last trip some bodies were being put through and polished, but have heard no further comments. Will make it a point to check up on the out-come in a week or two.

TERNSTEDT MANUFACTURING CO.

Closely connected with Fisher Body Corp., is the Ternstedt Mfg. Co. This concern manufacturers all hardware used at the various Fisher Plants. We recently ran a series

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of tests at the Ternstedt plant using one and two coats of our 412 over numerous primers. Satisfactory results have been obtained as far as adhesion and application is concerned but a little more lustre than 412 gives is requested. Nor having 26672 available I plan to make some top coat material for test there this coming week, but will be cautious to hold down the percentage of 1640 that is to be used. On completion of these tests a decision will be reached as to whether the process will be adopted or not. Should it go through O.K., Ternstedt will prime and bake the frames and they in turn will be sent to the numerous Fisher assembly plants and here the Duco will be applied. I feel the out-come will be a two coat proposition the base coat being 412 and the top 26672. There is a considerable difference in cost of materials here which will be a factor in the decision to be made.

FISHER BODY—PONTIAC

The last of the Varnished jobs are going through the plant this week and beginning next week all closed models will be Duco. The Supt. here is attempting to cut out the use of rough-stuff and use additional coats over a baked primer. No detailed method has been worked out on this as

—2—

yet, so am unable to give you anything definite on the probable consumption, but suggest you be ready to meet a large demand, as production calls for 100 jobs per day and it will require at least a gallon to a job.

FISHER BODY—DETROIT

The most encourageing results are being obtained at the experimental plant here. Mr. Hurley has taken over the work and he is going after it in a manner sure to bring

out the merits; he has given me wonderful cooperation in the past few weeks. At this writing there are seven Buick Sedans, one Cadillac and a number of Oaklands in progress. With all due respect to the other units Mr. Hurley has recently finished an Oakland sedan that has the highest polish I have ever seen on Duco. It is superior to the Cadillac Roadster that was exhibited in the show room here. The Cadillac job here is for one of the du Pont's but has been requested finished in Varnish. This will be done. You can readily see the interest that has developed here and we can maintain same by closely following, that I will do from this end, but the factory must do its part on deliveries.

CADILLAC MOTOR CAR COMPANY

You have received orders calling for 10 gallons each of Cadillac Gray and Claret Lake and I understood this shipment had been made, however same has not been received and in the meantime Cadillac roadsters are being held pending arrival of same. Incidentall I was advised that the Cadillac blue was to be ready on Nov. 23rd, but at this writing no delivery has been made. Mr. E. F. Johnson is planning to have a new Cadillac finished in Duco. I have succeeded in selling him the idea of a polished job, but he has not definitely decided when he will purchase same.

BUICK MOTOR COMPANY

The Buick Motor Co., has recently completed five open cars in 412, these now stand ready to be polished. One has been completed and sold to R. D. Kavanaugh. The job is polished and a very high lustre has been obtained. Mr. Basseft personally inspected this job and stamped his approval. This is the first time we have succeeded in in-

teresting Mr. Bassett to the extent of examining a body finished in Duco, and feel this is a big step in our favor.

A closed body in Blue is now going through for Mr. Durham, and on receipt of the Dark sage green, a body in same will be put through for Mr. Bassett.

—3—

Mr. Weckler is quite agitated, because of the fact that we have not offered more feasible methods for rubbing operations and feels we are passing the Buck to them. I explained that the various methods used by the different automobile plants using Duco had been suggested, but none seemed to meet with their approval and they continue to use their own methods. He then brought up changes in materials and attributes better work to this. I disputed this and used the argument that it was skill on their part in handling the material and a change of heart on the part of the paint authorities that was responsible for the better work.

Regardless of this he wants a letter from us stating when the last basic change was made and why also our present recommendations for rubbing, so he may have something in writing when discussing same with the officials. Prospects appear better here than at anytime today and if we can continue our present progress it looks as though we may land some of the Buick business during the next year.

While at Buick Messrs. Weckler and Brown were quite alarmed over a report that came through Mullin in reference to a new Oakland. The report had it, that the Duco was breaking away to the metal in large chips and the owner was so much provoked, he had same removed and repainted.

I ran this down and found the owner Mr. Earl McGinnis of the Union Trust Co., Flint and the investigation disclosed that his car was purchased in May 1923 was a paint and varnish job, and he had not owned a Duco job. A letter to Mr. Weckler from me on Nov. 30th, should clear up this misunderstanding, a copy of same was sent to you. I have reason to believe this rumor started at Flint Varnish and magnified accordingly.

OAKLAND MOTOR CAR COMPANY

Production here continues to run approximately 125 jobs per day with the Newport Blue running off color. We have several bodies to prove this should Parlin come to see same. The standard blue is giving satisfactory results. At this writing Rogers is devoting a lot of time to polishing in an effort to eliminate rubbing operations entirely. We are unable to report any thing yet on the 531 material which carries additional softener content. In reference to the laboratory's report on recent complained Newport serials No. 23015, 22699, 23216, and 22617, why should this variation in shade continue. We have promised Oakland standard colors and have advised that our methods were fool proof and yet the difficulties are not remedied.

—4—

HUPP MOTOR CAR COMPANY

A number of Hupp roadsters are going through in Blue here, but at this writing no decision has been made as to how same will be finished.

The Hupp authorities are still much peeved over our failure to complete their orders and I believe unless the delivery is made next week they will cease to be further interested in Duco, for at least some time.

5

LINCOLN—FORD

Spent some time in the Ford factory recently watching their methods on trucks. They coat the entire body with 412 two coats over a thoroughly oxidized primer. The finished job, though dull is a pleasing one. They continue to experiment on colors for Lincoln work.

SIMON SALES—WILLYS-OVERLAND

Interviewed these people and they are interested from refinish view point. Nothing definite until they investigate the costs of apparatus, etc.

GENERAL MOTORS CORP.—REFINISH

Continue to put through a few jobs a week.

GENERAL MOTORS TRUCK COMPANY

Colors here will arrange demonstration as soon as possible.

OLDS MOTOR WORKS

Plan visit here at earliest opportunity.

GENERAL

The General Motors Corp., Fisher and Ternstedt have taken practically all of my time the past few weeks which has prevented my seeing the other prospective Duco users, but plan to get around shortly.

R. C. Williams

RCW:JPP

NOTE:- 1568 at upper right corner. The second full paragraph on page 2 is underlined near left margin and has arrow pointing to next paragraph. EF along right margin of second, third and fourth pages.

6

E

Defendant's Exhibit (DP) No. 186 6047

DU PONT FABRIKOID

Letterhead of

E. I. DU PONT DE NEMOURS & COMPANY
(Incorporated)
WILMINGTON, DELAWARE
SALES DEPARTMENT

May 1, 1923

J. J. Moosmann, Director of Sales

Attention: Mr. E. M. Flaherty

Enclosed you will find a memorandum given to me today by Mr. Rogers, Supt., of assembly and finishing at the Oakland Motor Car Co. This will give you an approximate idea of the amount of material the Oakland Motor people will use up to October 1st. This amount of material will take care of only one half the production that Oakland is making plans for. Beginning October 1st, it is likely that they will jump to 300 cars a day which would mean approximately 4000 gallons Duco per month. In reference to the part of the memorandum in regard to shipping specifications, I have not had time to take this matter up with the Oakland Purchasing Dept., as yet but will do so and advise you the latter part of this week.

Again we wish to emphasize the importance of having the Operating Department seeing that this material leaves Parlin the best that we can make. Providing we encounter no difficulties with these three months supplies we feel that this order will be but a trivial one.

We have a memorandum today from Mr. Breslin of the Fisher Body Corp., stating that they desire to start six bodies tomorow in Black Duco. Not having material on hand it is possible that I will be able to borrow five gallons from the Oakland Motor Car Co., for this work. In such case please be prepared to return same to Mr. Rogers without delay.

Visited Buick Motor Co., this morning and after talking to Mr. Weckler we should be prepared to furnish them 10 gallons of 244376 Maroon and 10 gallons of the closed body Buick blue, which I believe the factory has matched in color.

The work at the Flint Varnish & Color Works laboratory is about complete as far as actually coating panels is concerned. These tests are now on the roof and will be examined by us on May 23rd, which will be a one month test.

Have a wire from the Pierce Arrow people asking assistance on top work. Will arrange to spend Monday there unless urgently needed in General Motors work here.

R. C. Williams

RCW:JPT

NOTE: Answered May 1923 EM Flaherty is stamped in right corner. Check after Mr. EM Flaherty at top center. Words Oakland Motor Car Co. is circled with line extending to upper right corner. RCW handwritten after signature.

2
E

Defendant's Exhibit (DP) No. 187

(6049)

April 30th, 1923.

Mr. R. C. Williams.

Dear Sir:—

As per your request I am listing below the estimated requirements of duco material for our production, covering a period from July 15th to October 1st:

July 15th to July 30th,	698	gallons
August	2018	"
September	2209	"

For further information regarding the specifications on this material would advise you to get in touch with our purchasing department, would also suggest that your sales department get in touch with our purchasing department relative to shipping specifications.

A. C. Rogers.

NOTE: A handwritten R correction in salutation. 1565 underlined at upper right corner. "Mr. Flaherty, Mr. Elms and Mr. Lackey seemed especially interested in getting this information. *RCW*" in lower left corner.

November 7, 1923.

PROMOTION REPORT FOR OCTOBER.

AUTOMOBILE INDUSTRY

CADILLAC MOTOR COMPANY

No further work with Duco was done at this factory during October and none can be done until we send out colors in Duco, matching the three Cadillac standards. These standards were given to us in the latter part of June and we are encountering adverse criticism not only at the Cadillac factory, but elsewhere throughout General Motors, because of our delay in matching them. While this delay does not mean that Cadillac's work has not had constant attention in our laboratory, it does clearly indicate that we must provide increased color matching facilities and personnel if we hope to take care of the needs of our expected Duco customers at all promptly.

BUICK MOTOR COMPANY

A renewed interest in Duco, as mentioned last month, is noted at this factory. The officials wish to have a steady production of a few Duco cars per day and here also they are simply awaiting our colors before inaugurating this plan.

OAKLAND MOTOR COMPANY

Oakland continues to use Duco on all open models with increasing satisfaction, and a slight improvement in the quality of the jobs. Experimental batches with slightly

increased softener content have given good results, and in November it is expected that four or five hundred cars will be put out with an Enamel containing a higher amount of softener than the standard 526. The most important development at Oakland was in reference to the use of Duco on closed cars. There has been an almost unanimous demand on the part of Oakland distributors for Duco on the closed jobs, because they say they are in an illogical position when they attempt to explain to a prospective Oakland purchaser why the Oakland Company uses a better finish on the cheaper open cars than on the more expensive closed models. The new Fisher Body plant at Pontiac has already started to turn out a few closed Oaklands in Duco and it is expected that this output will gradually increase until no paint jobs are finished. This means scrapping of a great deal of new and expensive paint-drying equipment, otherwise the adoption of Duco would probably now be an accomplished fact at this Fisher plant.

—2—

THE OLDS MOTOR COMPANY

There were no new developments at this factory, but we learned of the intention of the management to finish about 400 sport jobs in Duco for a comparative cost and service test with a new type of paint finish in which they are also interested. Our match in Duco for the Oakland "weathered bronze" was apparently satisfactory.

FISHER BODY CORPORATION

As far as Duco is concerned, this was covered under the Oakland notes, and we are also glad to report increased business in both Viscolac and Duco from the Cleveland and St. Louis factories.

3857

FORD MOTOR COMPANY

Ford has ordered a total of 3400 gallons of Duco and 3500 gallons of Thinner within a space of a few weeks. Duco is used on a new model Ford truck, and a great portion of the above quantities were shipped to various assembly plants throughout the country. We feel that Ford has ordered somewhat in excess of immediate requirements, believing that prices on Duco were about to advance. It is so unlike the Ford Company's policy to purchase such a high priced material as Duco in a non-competitive market, that we are quite certain he will make every effort to obtain a second source of supply. While a real match for Duco will not readily be developed by our competitors, it is certain that an Enamel sufficiently good for Ford's requirements, will be offered at a price below that of Duco. We have, accordingly, asked the laboratory to try to develop a cheaper modification not necessarily of as good quality as Duco, in anticipation of the time when we shall need it to meet competition for Ford's business.

We now have a resident representative in the Cleveland district, who is carrying on a great deal of Duco work with the more important manufacturers there. Cleveland and Jordan are our best prospects. During October Cleveland sent out a few polished jobs to distributors to get the feeling of the public toward that finish.

Jordon has sent in colors to be matched and expects to turn out 30 or 40 jobs for a similar purpose as soon as we supply the colors.

—3—

Demonstration work was also done for the Cleveland Akron Bus Company, Kissel Motor Company, the General Motors Re-finishing shop in Detroit, The Moon Motor Com-

pany and some assistance given Franklin on polishing. We understand that Franklin has sent out a number of Duco jobs to important distributors recently.

The re-finishing trade continues to be a problem, as we are offered plenty of opportunities for relatively small sales which would follow expensive demonstrations. We are trying as a tentative plan the offer to furnish a skilled demonstrator to important re-finishers, making a charge of $20. per day and traveling expenses for his services. One immediate result of this plan is the discouragement of small unimportant re-finishers with whom correspondence alone would soon become too great a burden. It seems probable now that the other important General Motors units will hardly adopt Duco on a large scale before the next car season, and so while the solvent situation remains unsatisfactory, there is no reason why we should not encourage more of the manufacturers to proceed with their Duco experiments, as it is very unlikely that we shall be unable to fill any orders received.

SPLIT LEATHER INDUSTRY

We have been continuing our efforts to obtain business from the Ashtabula Hide & Leather Company in Powder Dope. They finally told us that they would probably be willing to purchase another carload if our Dope could be used with a supply of competitive Thinner which they had on hand in great excess. We found that our Dope apparently would work with this Thinner, and are going after the order on this basis.

The Split Leather business in general remains quiet.

FURNITURE INDUSTRY

A very important conference was held in Parlin during October in which the three salesmen calling exclusively on the furniture trade were present, as well as representatives from the sales office and the laboratory. The handicaps Viscolac has been under were very thoroughly discussed and a constructive program for overcoming them was adopted. Our most serious trouble has been the development of white pores in the filler, but very recent work which was reported at this meeting, indicated that several commercial

Fillers now on the market will work under Viscolac without this difficulty. A new Filler has also been made in our laboratory, which is free from this defect, so it looks as though the white pore trouble which has been our most serious drawback, is about conquered.

The next most serious trouble has been the development of a gray or white haze on top of the Viscolac finish. While the true cause of this haze is still not definitely determined, one remedy for it at least has been suggested. It has been found that if, immediately after rubbing, the furniture is washed thoroughly with soap and water the gray haze will not appear. This remedy may not be practical in the furniture factories, but it is of some assistance to us to have even this to suggest when the trouble is encountered.

Progress has also been made in the development of oil stains which will not bleed, and our laboratory has made both Mahogany and Walnut Stains, which are free from bleeding troubles. Whether or not we can get these made at a reasonable price for the furniture trade, is still to be determined. We have also found at least one commercial

product which seems to work perfectly, so this trouble too is not so baffling as it has been until recently.

As a result of this meeting our furniture salesmen are back in their territories with considerably greater confidence in Viscolac than they had ever had, and it is fair to expect more productive work from them in the future. We have been receiving reports of reduced prices on competitive products which, however, are not yet seriously interfering with Viscolac sales.

Below is given a resume of the work done in the various furniture districts during October.

Miner gave a demonstration at the Lentz Table Company, at Nashville, Michigan, also at Grinnell Brothers, at Holly, Michigan. In both cases the white pore trouble developed. He also arranged for a demonstration to be given at the Ranney Refrigerator Company at Greenville, Michigan.

Heald secured an additional order from the Nypenn Furniture Company at Warren, Pennsylvania, and after giving a successful demonstration at the Herrick Manufacturing Company, at Falconer, New York, secured a trial order for four drums of material. This concern is apparently entirely satisfied with our material, and we look for a good volume of business from them. We feel that this foot-hold we have obtained in the Jamestown district will assist

materially in breaking down the apparently general prejudice against Lacquer finishes in that territory.

The successful demonstration which Grubb gave at the Parkersburg Chair Company, Parkersburg, West Virginia, has resulted in a five drum trial order. The fact that they are using a competitive Lacquer in their regular pro-

duction leads us to believe that we have obtained a permanent customer through the superiority of our materials, and we expect a good volume of business from them. He gave a successful demonstration at the B. F. Huntley Furniture Company, Winston-Salem, North Carolina, and took a trial order for Duco material to be used in finishing a special order for hotel furniture. They have not definitely adopted our material for their regular production as yet. He also gave a successful demonstration at the Thomasville Chair Company, Thomasville, North Carolina, but no decision has been reached as to their adoption of our material as yet.

About the only thing to report in La Fleche's territory during the month is additional orders from the Davis-Burley Table Company at Shelterville, Indiana, and the Star Piano Company at Richmond, Indiana, of four drums each.

The demonstration given by Simmons at the Jacob Doll & Sons Piano Company in New York was not a success, because of the development of pin holes throughout the finish due to poor filling. The Viscolac finish was very good, but another demonstration will be given, and special care and pains taken that the wood is properly filled.

We have an additional eight drum order from the Abernathy Furniture Company, at Leavenworth, Kansas, and Sprong reports that the Bonner Furniture Manufacturing Company at Nashville, Tennessee, will use our materials on all mahogany and walnut production in the future. He does not expect them to be large users, however, as a large percentage of their production is of the cheaper grades of wood on which they will not use our materials.

Allen has shown unusual activity during the month in furniture sales promotion work, and has secured trial orders from the F. S. Harmon & Company, Murphy Manu

facturing Company, Northwest Chair Company, Gregory Furniture Company, all of Tacoma, Washington. Also from the Doernbecher Manufacturing Company and Carmen Manufacturing of Portland, Oregon, and the Rainier Furniture Manufacturing Company and the General Furniture Company of Seattle, Washington. In several cases he failed to sell the intermediate to be used as a first coat under the 1640, and we have taken the matter up in

quite some detail with Matthey, recommending that if these concerns insist on using the 1640 over Shellac we go on record by writing them a letter to the effect that we cannot be responsible for any poor results which they are most likely to obtain.

We were disappointed to learn from the Inland Manufacturing Company that, because of the continued failure of our Clear Viscolac to stand any sort of weathering test, they had decided to discontinue purchasing from us until we could improve our product in this respect. They said that they have a local source of supply, which we presume to be Lowe Brothers, for a product as good as ours, and since purchasing from this Company removes the necessity for carrying any stock; no more purchases are being made either from du Pont or Glidden the former source of supply.

NOTE: Paragraph sign in eighth line of second paragraph of third page.

Defendant's Exhibit (DP) No. 189

E. I. DU PONT DE NEMOURS & CO.
(INCORPORATED)
CELLULOSE PRODUCTS MANUFACTURING DEPARTMENT
PARLIN, N. J.

May 12, 1924.

Mr. E. M. Flaherty,
Director of Sales

BUICK MOTOR CO.,
Flint, Mich.

The following report covers calls made at Flint with Williams on May fifth and sixth.

On the fifth we found four sport models, two roadsters and two tourings, in process of completion. All had only two coats of Duco (537) over a paint ground coat, contrary to Williams' agreement with Browne following our previous visit that one of each would be finished in this manner and one of each with three coats of 537 without any ground. The only difference between the two pairs was that on one pair two coats of surfacer instead of one had been used.

The workmanship as regards spraying, rubbing and polishing was very good, and it was evident that the men in charge of the preparation of these cars had really tried to turn out good jobs, with the exception that Browne had insisted on using only two coats of Duco.

In my opinion this is not sufficient to guarantee a first-class job in this color, although Browne and Williams do not agree with me. Williams admits the finish looked thin, but believes this will be remedied in regular production by heavier coats.

One of the cars showed a number of dark streaks, where the spraying had been lighter or the rubbing heavier. Another showed a slight difference in shade between the body and the hood, which Browne explained was due to less surfacing material being used on the hood. I believe that if three coats were used it would cover up such variations as these, and also provide a heavy enough finish to prevent the development of such variations in service due to the wearing down of the film from the owner's cleaning and polishing operations.

The weather was cloudy on the morning of the sixth when the official inspection was made, and I think this fact was largely responsible for the failure of these imperfections to attract more than passing notice. The inspection was made by Bassett, Durham and Strong in the presence of Browne, Williams and myself. All were favorably impressed, and pronounced the work satisfactory after very little discussion. Apparently Durham had seen the cars before, but Bassett and Strong appeared pleasantly surprised by the degree of lustre, which was very good.

In general, Durham's attitude indicated that he was entirely satisfied with the work and regarded the inspection as an unnecessary waste of time. Bassett, on the other hand, made up his mind rather slowly, but appeared satisfied when he made his decision, which was influenced by Strong's unqualified approval. It looked to me that Bassett's favorable first impression was weakened

(6059)

E. I. DU PONT DE NEMOURS & CO.
(INCORPORATED)
CELLULOSE PRODUCTS MANUFACTURING DEPARTMENT
PARLIN, N. J.

Mr. Flaherty 5/13/24

by his following critical inspection, during which he probably noticed the imperfections previously mentioned, and that Strong's emphatic O.K. was the deciding factor. Strong spent most of the time walking around the cars at a distance of about ten feet and admiring the polish. It seemed to be a case of love at first sight on his part.

Bassett approved the adoption of this finish as standard on these two models as soon as the necessary arrangements can be made, which it is estimated will be about May 25th. Later in the day we secured our first production order, for 500 gallons of Duco and 750 gallons of Thinner, for prompt shipment.

Bassett asked me to see L. P. Fisher right away about getting started on the closed cars of this type, instead of waiting until Flint had been in production for about a week, as was arranged at our previous conference. He said Fisher would return from New York on the eighth, and I promised to see him on that day. I spent most of the eighth and ninth trying to get an appointment with Fisher, but he had not returned and nothing had been heard from him up to the time I left Detroit late in the afternoon of the ninth. I did not wait over the week-end for him because it will be necessary for me to go back to Detroit this week in connection with the trouble that has developed at Chevrolet and Cadillac.

We submitted to Bassett panels showing finishes obtained with our two new blues, 598 and 605, to match their standard "Cobalt Blue". The panel finished with one coat of 598 followed by two coats of 605 matched exactly, while the one with three coats of 598 was very close and represented the nearest we could get when using only one Duco. Bassett was disappointed that three coats were necessary, but seemed satisfied with my explanation that satisfactory covering could not be obtained with two coats when using pigments of transparent character that are necessary to secure the brilliant color he wants. He told Browne to prepare a seven passenger touring car, known as model 49, to duplicate each of the two panels mentioned; whereupon Browne promptly renewed his objections to three coat work and urged the use of two coats over a paint ground, pointing to the sport cars that had just been approved as evidence that this method would be satisfactory. Just as it looked as if we might drift into an argument unless either he or I surrendered, Durham came to the rescue with the suggestion that two cars be done one way and two cars the other, which Bassett promptly approved.

It was evident that Browne did not like this decision, and it was because he gave me the impression that he had no intention of doing any three coat work that I wrote him as per copy attached upon my return to Detroit May 7th. You will note I avoided any reference to the decision regarding three coat work, in order to avoid antagonizing him by putting this on record.

3665

E. I. DU PONT DE NEMOURS & CO.
(INCORPORATED)
CELLULOSE PRODUCTS MANUFACTURING DEPARTMENT
PARLIN, N. J.

6060

Mr. Flaherty

5/12/24

Browne says his objection to three coats is because it is more expensive and no better than two coats over a paint ground. There is no doubt that he is right on the first half of his argument, but it is evident that he cannot be sure of the second half until he has done some three coat work in direct comparison with the other method. It is merely his opinion, but apparently he is so sure of it that he does not consider it worth while to make a test.

Even if color and covering are equal by both methods, I would still feel that three coats of Duco without a paint ground would be safer for a high class finish in delicate or transparent colors as long as our product has its present tendency to rub off in service, but we are handicapped in being unable to present this important point for fear of frightening the prospective user on the entire proposition.

In this connection, it has occurred to me that it might be advisable to reduce the viscosity of all our automobile Ducos if this can be done without sacrificing any desirable properties. This would make it unnecessary to use so much thinner to obtain a satisfactory spraying consistency, with the result that a heavier film would be deposited on the work by each application.

It is my impression that the viscosity of Oakland dark blue (531) is lower than any of our other colors, and that Oakland started by using it in the proportion of seventy parts to thirty parts thinner. If this is correct, it is evident that we are now getting films approximately 30% lighter with each coat with the present general practice of using Duco and thinner in 50/50 proportions, and that the heavier viscosity of our other colors may explain why it has been necessary to increase the proportion of thinner to obtain satisfactory spraying consistency. I believe this question should be discussed at our next Staff Meeting.

We delivered to Buick one five-gallon can each of 598 and 605 blues, and it is expected that the sample cars finished with these colors will be ready for inspection the latter part of this week.

The Buick Paint Superintendent, Mullin, did not participate in any of our conferences, and the only interest he displayed was with respect to the decision reached following inspection of the sport jobs. His general attitude seemed to be that of sullen indifference, and I am afraid we cannot count on him for any enthusiastic co-operation for the success of the Duco program. It is of course our intention to try to win him over to our side.

3

6061

E. I. DU PONT DE NEMOURS & CO.
(INCORPORATED)
CELLULOSE PRODUCTS MANUFACTURING DEPARTMENT
PARLIN, N. J.

Mr. E. M. Flaherty

5/12/24

Bassett told us that Allen, P.A., had received an inquiry from one of the Dodge buyers, J. S. Ebner, asking what Buick's experience had been with Duco, et cetera, to which Allen had replied that they considered it very satisfactory, are adopting it as standard on two of their models, and that it is their present expectation to extend it to the entire line. Our call on Ebner on May 7th will be covered by a separate report.

J. J. MOOSMANN

JJM:ML

NOTE: X at upper right corner of first page. Handwritten signature of JJ Moosmann. EF and 13 along right margins of all pages.

3367

Defendant's Exhibit (DP) No. 191 60652

EXCERPT FROM THE MONTHLY REPORT OF THE FABRICS AND FINISHES DEPARTMENT TO THE EXECUTIVE COMMITTEE FOR MAY 1947, DATED JUNE 27, 1947.

—5—

CHEMICAL DIVISION

A sheet metal primer is a vital part of the finishing system in an automobile plan. The primer is used in large tanks of eight to ten thousand gallons capacity and all of the sheet metal, including hoods, fenders, and miscellaneous parts, are primed by dipping in these tanks from a conveyer line. For some years, du Pont has been the principal supplier of this type of primer to the Automotive industry.

Before the war and immediately after we supplied a product based upon lithopone as the primary pigment and a conventional linseed oil limed rosin varnish as the vehicle. Although generally satisfactory, this product sometimes became "seedy" on low-temperature storage as the result of the precipitation of zinc soaps formed by interaction of the lithopone pigment and vehicle.

During the past year the Flint Laboratory developed a new sheet metal primer that has improved our position in the field. The product has a basically new vehicle made from an air blown linseed oil produced at high temperature and hardened with ester gum. The hydrophillic character of the oil gives it wetting and dispersing properties for the pigments which make possible the use for pigmentation of a combination of cheap extender pigments that in previous vehicles gave bad settling and severe flocculation.

In dipping products of this sort a very delicate balance is required between flocculation and dispersion of the pig-

ment if the product is to have adequate flow on sheet metal without excessive settling in dip tanks. This balance is achieved by the use of a small percentage of a specially bodied oil in the pigment grind.

It is estimated that during 1947 approximately 400,000 gallons of this product will be sold at a saving of around $120,000 in mill cost and 400,000 pounds in linseed oil consumption.

EXCERPT FROM THE MONTHLY REPORT OF THE FABRICS AND FINISHES DEPARTMENT FOR APRIL, 1946, DATED MAY 22, 1946.

—2—

A new and patented finish, "Duco Metalli-Chrome", was formally introduced to the automobile industry at an exhibit in the Masonic Temple in Detroit, Michigan on May 8th. The latest models of eleven new automobiles had been finished with the new product and were exhibited. Also on display was a car which had been finished with "Duco Metalli-Chrome" about five years ago and had since been in constant use. The new models consisted of Buick, Cadillac, Chevrolet, Ford, Lincoln, Mercury, Hudson, Nash, Oldsmobile, Packard and Pontiac.

The exhibit was attended by at least 365 of the executive personnel of the automobile industry in the afternoon, following a preview and luncheon for the press in the morning. Most of those who attended in the afternoon were entertained at the Recess Club for dinner. About 250 representatives of competitive lacquer manufacturers viewed the exhibit on May 9th and were informed that licenses under the "Duco Metalli-Chrome" patents would be offered in the near future.

The exhibit aroused considerable interest in the new finish and indications are that it will be used extensively by the automobile industry.

NOTE: There are two check marks in the left hand margin, one opposite the second line in the first paragraph and the other opposite the last line in the second paragraph.

EXCERPTS FROM THE MONTHLY REPORT OF CHEMICAL PRODUCTS DIVISION TO THE EXECUTIVE COMMITTEE FOR MARCH, 1926, DATED APRIL 19, 1926.

—13—

PRICE AND COMPETITIVE SITUATION.

While the lower prices on Duco and Duco Thinner, which were made effective during the month of March, were naturally well received by our customers, only small increases in our business can as yet be traced to the new prices.

We developed a new and superior black at the same time the price was lowered and it is expected that this will give us at least a large proportion of the black business of the Fisher Body Corporation which has been going to competitors.

As a direct result of the price reduction our relations with the Fisher Body Corporation have improved to a considerable degree, and they have virtually promised us a considerably larger portion of their business than we have heretofore enjoyed.

—14—

EXPERIMENTAL

A complete pyroxylin system for automobile finishing, including primer, putty and surfacer, has been perfected to a degree that we feel warranted in offering it to those manufacturers who need the extra speed of operation offered by such a system, and substantial orders have been received for these products.

EXCERPT FROM THE MONTHLY REPORT OF THE PAINT, LACQUER, AND CHEMICALS DEPARTMENT TO THE EXECUTIVE COMMITTEE FOR MAY, 1927, DATED JUNE 20, 1927.

—2—

The departmental sales for the five months ending May 1927 amount to $20,624,767 and the earnings for the same period amount to $2,849,251. This last figure includes a reserve of $55,500 set up in anticipation of General Motors super-discount which it is expected they will have earned for the nine months ending June 30, 1927.

This super-discount is not as large as was anticipated, for several reasons. In the beginning of the year there was a radical reduction in Duco and Thinner prices, as has already been reported, and which reduced the total gross sales dollars against which the super-discount is figured. In addition to this it was hoped that the introduction of this plan might be helpful in acquiring the Fisher Body Duco Black business and the Fisher Body Undercoat business, which to date has not materialized.

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PRICE AND COMPETITIVE SITUATION

During May the market price of ethyl acetate suddenly advanced 13¢ a gallon and accordingly our schedule price was advanced from 77¢ a gallon to 90¢ a gallon.

The competition in the wood lacquer and enamel field is becoming very keen and in a great number of instances we are receiving reports of where competitive lacquers and enamels are being sold at prices considerably below ours. However, we do not feel that we are as yet in a position where we are actually losing business as a result of these

quotations, but of course they may be standing in the way of our acquiring new business.

Competition in the Bronze Powder field is becoming very severe, quotations and sales having been made at a figure as low as 35¢ a pound as compared with our schedule price of 45¢ a pound.

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It has finally been decided by the Fisher Body Corporation not to adopt our pyroxylin surfacer as an undercoating material, but to continue the use of oil-type products purchased from competitors. They claim its higher price results in a net increase in cost per body, after allowing for the savings due to faster production and elimination of high-temperature ovens. They also object to it on the ground of increased fire hazard, although it is no more hazardous than the pyroxylin finishes they are using in large quantities.

Defendant's Exhibit (DP) No. 195

SALES OF FINISHING PRODUCTS BY E. I. DU PONT DE NEMOURS AND COMPANY TO GENERAL MOTORS CORPORATION

(Years 1938 through 1941; 1946 (1) through 1947)

	1938	1939	1940	1941	1946	1947
"Duco" Lacquer*	$3 018 247	$4 473 528	$ 6 716 092	$ 7 306 536	$ 4 516 787	$ 8 381 994
"Duco" Thinner	1 551 357	1 838 477	2 160 878	2 461 583	2 394 809	3 842 804
Total "Duco"	4 569 604	6 312 005	8 876 970	9 768 119	6 911 596	12 224 798
All Other Finishes	1 625 625	2 448 844	2 850 091	3 757 389	3 518 256	6 713 431
Total Finishes	$6 195 229	$8 760 849	$11 727 061	$13 525 508	$10 429 852	$18 938 229

(1) Years 1942 through 1945 excluded because of suspension of automobile production During The War.

* Includes very small amounts of Primer made of Pyroxylin materials.

Prepared By:
E. I. du Pont de Nemours and Company
Treasurer's Department

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EXCERPT FROM THE MONTHLY REPORT OF THE FABRICS AND FINISHES DEPARTMENT TO THE EXECUTIVE COMMITTEE FOR JULY 1946, DATED AUGUST 23, 1946.

Further progress can be reported in developing better trade relations with the Ford Motor Company, which recently placed with us orders for more than $110,000 worth of DULUX for finishing cars. In tendering us that business Ford expressed the hope that such action would mark the beginning of long and pleasant relations between Ford and du Pont.

The McGraw-Hill Research Department recently conducted a survey for the publication "FACTORY" to determine the preference for brands and kinds of paints in the broad manufacturing industries including metal production, metal working, chemical processing, foods, textiles, and lumber products such as furniture, housing, etc. One hundred seventy-eight returns were received from plants, practically 60% of which employed 500 to 2500 or more people.

The results showed that 18.7% of all those industrial buyers named du Pont interior finishes as their first choice; 11.4% as their second choice and 2.4% as their third choice. Only our largest competitor, the Sherwin-Williams Company, outranked us by a slight margin (19.5%) when it came to first choice; the Pittsburgh Plate Glass Company being in third position with 17.9% of the first choice votes. No other firm was even close, the next two ranking 8.9% and 5.7% respectively, with the remaining 49 named trailing from 2.4% to zero. Totaling all first, second and third

choices for du Pont finishes, 32.5% of the field voted for du Pont products.

As to exteriors, preference for du Pont paints also ranked second with 20% of the first choice votes, Sherwin-Williams being in first position with 21% and Pittsburgh third with 15%. No other firm ranked higher than 4% of the votes and most of the others mentioned were accorded the preference

—3—

of only 1% of the industries reporting. Ten per cent of the buyers voted for du Pont products as second choice and 2% as third choice, maintaining our position throughout as second with 32% of all expressed preferences.

The growth in the preference for our brand may be expressed as having advanced from a rough average of 5.65% in 1929 to 10.5% in 1939 and 19.4% in 1945.

NOTE: The words "18.7%" in the first line of the third paragraph, "du Pont interior finishes" in the second line of the third paragraph, "32.5%" in the last line of the third paragraph, "exteriors" and "du Pont paints" in the first line of the fourth paragraph, "20%" in the second line of the fourth paragraph, and "32%" in the second to the last line of the fourth paragraph have been underlined. There are two check marks in the left hand margin, one opposite the second line in the first paragraph and the other opposite the last line in the last paragraph.

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Defendant's Exhibit (DP) No. 197 6071

EDMUND M. FLAHERTY

POSITIONS HELD IN E. I. DU PONT DE NEMOURS & CO.

1911 TO DATE

Date	Job	Department	Location
July 1911-Jan.1913	Chemist in charge of general analytical work and training course	High Explosives Operating Dept.	Eastern Laboratory
Jan.1913 -Sep.1914	Research chemist - Pyroxylin	Smokeless Powder Operating Dept.	Parlin, New Jersey
Sep.1914 -Feb.1917	Assistant Superintendent, Pyroxylin Department	Smokeless Powder Operating Dept.	Parlin, New Jersey
Feb.1917 -Jan.1921	Superintendent, Pyroxylin Department	Smokeless Powder Operating Dept.	Parlin, New Jersey
Jan.1921 -Jan.1922	Assistant Manager, Pyroxylin and Nitrocellulose Section	Smokeless Powder Operating Dept.	Wilmington, Delaware
Jan.1922 -Dec.1924	Assistant Director of Sales, Chemical Products Division	Paint, Lacquers & Chemical Dept.	Parlin, New Jersey
Jan.1925 -Feb.1926	Director of Sales	Paint, Lacquers & Chemical Dept.	Parlin, New Jersey
Feb.1926 -Feb.1930	Assistant Division Manager, Chemical Products Division	Paint, Lacquers & Chemical Dept.	Parlin, New Jersey
March 1, 1930 - December 1932	Division Manager (Finishes Division)	Fabrics & Finishes Dept.	Wilmington, Delaware
December 9, 1932 - May 5, 1941	Division Manager (Fabrikoid Division)	Fabrics & Finishes Dept.	Wilmington, Delaware

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May 6, 1941 - November 1944	Assistant to General Manager	Fabrics & Finishes Dept.	Wilmington, Delaware
Dec. 1, 1944 - April 28, 1945	Division Manager (Finishes Division)	Fabrics & Finishes Dept.	Wilmington, Delaware
April 29, 1945 - July 31, 1946	Leave of absence (illness)		
August 1, 1946	Transferred to Pension.		

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Note:

Pages 6073 - 6074 are on card 56.

Page 6075 is first exposure following card.

Reissued Nov. 29, 1927. Re. 16,803

UNITED STATES PATENT OFFICE.

EDMUND M. FLAHERTY, OF PARLIN, NEW JERSEY, ASSIGNOR TO E. I. DU PONT DE NEMOURS & COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

LOW-VISCOSITY LACQUER AND FILM PRODUCED THEREFROM.

No Drawing. Original No. 1,679,999, dated May 24, 1927, Serial No. 471,931, filed May 23, 1921. Application for reissue filed September 19, 1927. Serial No. 220,023.

This invention relates to low viscosity lacquers and films produced therefrom, and more particularly to lacquers made from cellulose esters or nitrates having a greatly reduced viscosity and containing resins or oils that will impart such qualities to the lacquers that, upon drying in two or three coats, films will result that will be hard, durable, tough, and adhesive, together with other valuable properties.

It is an ultimate object of my invention to provide a film whose principal constituent will be a cellulose nitrate, which film will possess the characteristics of hardness, durability, toughness, transparency, freedom from acidity, lustre, and capability of adhesion to a surface to be coated; and which will at the same time be built up of only two or three layers or coats. A further object in this connection is to utilize cellulose nitrates which have been greatly reduced in viscosity, but which have not been reduced to the point that the nitrogen content is degraded and the transparency and solubility of the cellulose nitrate impaired. A further object is to prepare lacquer and enamel compositions that will, upon drying, provide a film as aforesaid possessing a continuous unbroken appearance. Further objects of the invention will appear as the following description proceeds.

According to my invention pyroxylin solutions, and particularly lacquers, having an abnormally high nitrocellulose content in conjunction with a suitably low viscosity are produced by subjecting pyroxylin mixtures of the character hereinafter described, for a prolonged period, say from one to three weeks, preferably at ordinary room temperature, to the action of a metal salt of a weak acid, for example an alkali-forming metal acetate. The discovery of the action of salts of this kind on the viscosity of pyroxylin solutions is described in the patent of Earle C. Pitman No. 1,636,319, and the application of this discovery to the reduction of viscosity of pyroxylin solutions is claimed broadly therein. By a particular application of this discovery to high percentage pyroxylin solutions, I have found it practicable to produce solutions, such as lacquers and colored enamels, of such a high pyroxylin content that they will deposit in two coats a film as heavy and satisfactory as the ordinary solutions do in four coats or more.

My invention may be illustrated in detail by the following examples:

I. I first make up a solution of from 25 to 30% pyroxylin in suitable solvents. A typical pyroxylin base solution for this purpose may be made according to the following formula:

	Parts.
Amyl acetate	11
Amyl alcohol	5
Acetone	35
Toluene	14
Denatured alcohol	5
Pyroxylin	28

To this mixture is added .56 part by weight of crystalline sodium acetate preferably dissolved in methyl alcohol. The amount of sodium acetate added may with advantage be from about 0.1 to 3% of the weight of pyroxylin in the solution; I preferably use 2%.

The resulting mixture is allowed to stand several weeks in a warm room and at the end of this time the viscosity is found to have dropped to a very low point, too low even for most purposes. I then add a slight amount of heavy viscosity pyroxylin which brings the solution viscosity up to a suitable working point where it stays indefinitely, there being no further action of the sodium acetate. To the solution containing a very high percentage of pyroxylin I now add suitable gums, oils and colors to impart extra adhesiveness, flexibility and shade as desired. Thus, after the viscosity has been reduced to a minimum and brought back to a suitable point, a lacquer can then be prepared by making a mixture containing 56% of this base solution, 9% of castor oil and 35% of a 50% gum solution in suitable solvents. This gum may be dammar, shellac or any of the other common gums used in lacquers. Dammar may first be dissolved in a mixture of toluene and benzene. Shellac may be used in the form of its solution in alcohol. Instead of castor oil, various other

vegetable oils, such as blown cotton-seed oil, may be added to impart flexibility to the coating.

In a similar way a colored enamel can be made from the original base solution by the addition of pigments ground in oil.

II. Instead of preparing the base solution of high percentage pyroxylin and correct viscosity in two steps, I may prepare it in one step by mixing all the pyroxylin with the solvent at the start, adding about 2%, based on the weight of pyroxylin, of sodium acetate, and allowing to stand, until the reduction in viscosity has progressed to the desired extent. The amount of pyroxylin added in this alternative procedure may be such, for example, that the resulting mixture will contain from about 30 to 40% of pyroxylin. After adding the sodium acetate the mixture is preferably allowed to stand at room temperature for about three weeks. Where less than 2% of sodium acetate is used, a longer time will be required.

By following the procedure set forth in the above examples a 25 to 40% pyroxylin solution may be obtained having a viscosity below 25,000 centipoises, as determined in the Stormer viscosimeter, at 28° C., 25,000 centipoises being practically the upper limit for any commercial solution which is to be used for coating without thinning. A centipoise is a c. g. s. unit of viscosity, water being about 1 centipoise at 20.2° C. Such solutions will, as a rule, be considerably diluted with solvents before being used in spraying or brushing surfaces to be coated.

In place of sodium acetate various other substances may be used as viscosity-reducers, either singly or two or more together. The alkali-metal formates and acetates are especially useful, and the alkaline earth metal salts, as well as the cadmium, cobalt, and zinc salts, of these same acids have a marked effect on the viscosity of pyroxylin solutions. In general, of the salts of organic acids, the water-soluble salts of the lower monobasic aliphatic acids appear to act as the best viscosity-reducers. Salts of some inorganic acids also exhibit this property, as for example the alkali-metal borates, iodides, sulphocyanates, etc.

The pyroxylin solutions coming within the purview of my invention are, of course, not confined to the particular solvent mixture given in the above examples. Thus instead of amyl acetate and amyl alcohol, I may use butyl acetate and butyl alcohol, respectively; and in place of toluene, the other benzenoid hydrocarbons such as benzene and xylene may be used. In fact any of the well-known solvent mixtures may be substituted for the one mentioned in the above examples without departing from my invention, said mixtures usually comprising a diluent such as benzene.

The maximum pyroxylin content of pyroxylin solutions which have heretofore been of practical use for coating purposes, has been about 15%, whereas the solutions made according to my invention will contain as a rule, if undiluted, more than 20% of pyroxylin, and in many cases between 25 and 40%. The above figures of 15% and 20% have particular reference to pyroxylin which has been dissolved in a mixture of solvents instead of in a single solvent. Such solutions may, of course, be diluted with solvents for spraying or brushing purposes.

The new lacquer is differentiated from cellulose nitrate lacquers heretofore known in that it contains at least 25% and sometimes from 50 to 150% more cellulose nitrate at a given viscosity than does a corresponding lacquer of the same viscosity and having the maximum content of cellulose nitrate which has not been subject to the above subscribed treatment with sodium acetate or a similarly functioning agent.

My new lacquer may be differentiated from prior lacquers by stating that the viscosity-characteristic of the nitrocellulose in the new lacquer is substantially lower than that of the nitro-cellulose contained in the lacquers heretofore known. This distinctive feature of the new lacquer makes it possible to identify the same irrespective of the extent to which the new lacquer is modified or thinned by the addition of gums, volatile solvents or diluents, etc. The above-mentioned viscosity-characteristic of the pyroxylin component of the new lacquer may advantageously be defined in terms of the viscosity that it imparts to some convenient solution taken as a standard when measured by a standard method. I have found it desirable to express this inherent viscosity-characteristic in terms of the viscosity possessed by a 16 ounce ethyl acetate solution of the reduced viscosity nitrocellulose when measured by the Stormer viscometer, at 28° C. Thus, a 25% pyroxlin solution having the solvent composition set forth in Example I above, and having a viscosity of 25,000 centipoises, as determined in the Stormer viscometer at 28° C., using a 500 g. weight, contains nitrocellulose which, when dissolved in toto in pure ethyl acetate (over 99.5%) to form a 16 oz. solution, imparts to said ethyl acetate solution a viscosity of about 1200 centipoises when tested in said viscometer at 28° C. In the preferred embodiment the lacquers and base solutions constituting my invention are consequently clearly differentiated from the lacquers of the prior art by containing, for their pyroxylin content, nitrocellulose whose inherent viscosity-characteristic is such that when said nitrocellulose is dissolved in pure ethyl acetate to form a 16 oz. solution, said solution possesses a viscosity of less than 1200 centipoises when

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tested in the Stormer viscometer at 28° C. (using a 500 g. weight), and generally the said lacquers and solutions are distinguished over the prior art by containing a nitrocellulose whose inherent viscosity characteristic is such that at above 20% concentration in a mixed solvent of the character described in Example I, it will provide a solution below 25,000 centipoises in viscosity.

I use the expression (1) "16 oz. solution" and (2) "16 oz. ethyl acetate solution" in the sense customary in the art of pyroxylin solutions, that is, to mean (1) 16 ounces of nitrocellulose dissolved in 1 gallon of solvent, and (2) 16 ounces of nitrocellulose dissolved in 1 gallon of ethyl acetate, respectively, at ordinary room temperature (22° C.).

When the new solutions hereinbefore described are used to coat various kinds of surfaces, particularly rigid metal or wood surfaces, to provide films thereon, either by spraying, brushing or dipping, the resulting films will be hard, durable, lustrous, transparent, tough, and continuous, and will adhere to the underlying surface. These films may be made of proper and sufficient thickness by the application of two or three coats, whereas in former practice where high viscosity nitrocellulose was used, a much larger number of coats had to be applied to obtain a film of sufficient thickness. My new films are particularly characterized by their toughness, i. e., the absence of any brittleness, this result being achieved by the admixture of the ingredients of the lacquer or enamel, with nitrocellulose, whose viscosity has been reduced by means of sodium acetate, or its equivalent in function, whereby the nitrogen content is not seriously reduced and correspondingly the resulting solubility of the nitrocellulose and toughness of the film remains substantially unimpaired. The use of the sodium acetate, which has an alkaline reaction, and the absence of acidic products in the low viscosity solutions or lacquers, permits of the addition of basic pigments without liability of incurring undesirable reactions.

It will, therefore, be apparent that I have provided lacquers and enamels containing a much higher proportion of nitrocellulose for a given viscosity than was hitherto possible, without in any way impairing the aforesaid characteristics of the film to be prepared, while at the same time making possible the easy application of these lacquers and enamels upon surfaces to be coated. As a result, films of the aforesaid excellent characteristics may be prepared, by the application of only two or three coats of my new lacquers or enamels, whereas in the old art it was necessary to put on many more coats in order to build up a film of proper and suitable thickness, this latter difficulty having been due to the necessary low nitrocellulose content of the prior art solutions at a working viscosity.

As many apparently widely different embodiments of this invention may be made without departing from the spirit thereof, it is to be understood that I do not limit myself to the foregoing examples, except as indicated in the appended claims.

I claim:

1. A pyroxylin coating composition comprising nitrocellulose, a softener therefor, and a volatile nitrocellulose-solvent, the viscosity characteristic of the nitrocellulose, expressed as the viscosity of a 16 oz. solution thereof in C. P. ethyl acetate, being less than 1200 centipoises when measured by the Stormer viscometer at 28° C.

2. A pyroxylin coating composition comprising nitrocellulose, a softener therefor, a gum, and a volatile solvent for the three first mentioned ingredients, said nitrocellulose, when 16 ounces thereof is dissolved in 1 gallon of pure ethyl acetate, yielding a 16 oz. solution whose viscosity is less than 1200 centipoises when measured by the Stormer viscometer at 28° C.

3. A pyroxylin coating composition comprising nitrocellulose, a volatile nitrocellulose-solvent, a softener for the nitrocellulose, a gum, and a pigment, said nitrocellulose, when 16 ounces thereof is dissolved in 1 gallon of pure ethyl acetate, yielding a 16 oz. solution whose viscosity is less than 1200 centipoises when measured by the Stormer viscometer at 28° C.

4. A coating composition comprising cellulose nitrate having an inherent viscosity characteristic such that at 25% concentration in a mixed solvent of the composition hereinbefore described it will provide a solution below 25000 centipoises in viscosity, and comprising also a resin and a solvent.

5. A composition comprising cellulose nitrate having a viscosity, as determined upon a 16 oz. solution of ethyl acetate with the Stormer viscometer at 28° C., of less than 1200 centipoises, and comprising also a resin and a solvent.

6. A coating composition comprising cellulose nitrate having an inherent viscosity characteristic such that at 25% concentration in a mixed solvent of the composition hereinbefore described it will provide a solution below 25000 centipoises in viscosity, and comprising also a resin, an oil, and a solvent.

7. A composition comprising cellulose nitrate having a viscosity, as determined upon a 16 oz. solution of ethyl acetate with the Stormer viscometer at 28° C., of less than 1200 centipoises, and comprising also a resin, and solvents to bring the viscosity of the composition below 25000 centipoises.

8. An article covered with a hard, dura-

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ble, tough, and adhesive film formed from a composition comprising a cellulose nitrate having an inherent viscosity characteristic such that at 25% concentration in a mixed solvent of the composition hereinbefore described it will provide a solution below 25000 centipoises in viscosity, and comprising also a resin.

9. A composition comprising cellulose nitrate having a viscosity, as determined upon a 16 oz. solution of ethyl acetate with the Stormer viscometer at 28° C., of less than 1200 centipoises, and comprising also a solvent and a resin, said composition being adapted upon drying of not over three coats to form a hard, durable, tough, and adhesive film.

10. A composition comprising cellulose nitrate having a viscosity, as determined upon a 16 oz. solution of ethyl acetate with the Stormer viscometer at 28° C., of less than 1200 centipoises, and comprising also a solvent, a resin, and a basic pigment, said composition being non-acidic whereby no reaction occurs with said pigment, and said composition being adapted upon drying of not over three coats, to form a hard, durable, tough, and adhesive film.

11. An article covered with a hard, durable, tough, and adhesive film formed from a composition comprising a cellulose nitrate having a viscosity, as determined upon a 16 oz. solution of ethyl acetate with the Stormer viscometer at 28° C., of less than 1200 centipoises, and comprising also a resin and a solvent.

12. An article covered with a hard, durable, tough, and adhesive film formed from a composition comprising a cellulose nitrate having a viscosity, as determined upon a 16 oz. solution of ethyl acetate with the Stormer viscometer at 28° C., of less than 1200 centipoises, and comprising also a resin, an oil, and a solvent.

13. A composition comprising cellulose nitrate having an inherent viscosity characteristic such that at above 20% concentration in mixed solvent of the composition hereinbefore described it will provide a solution below 25000 centipoises in viscosity, and comprising also a resin and a solvent.

14. A composition comprising cellulose nitrate having an inherent viscosity characteristic such that at above 20% concentration in mixed solvent of the composition hereinbefore described it will provide a solution below 25000 centipoises in viscosity and comprising also a resin and solvents to bring the viscosity of the total composition below 25000 centipoises.

15. An article covered with a hard, durable, tough, non-shrinking and adhesive film formed from a composition comprising a cellulose nitrate having a viscosity characteristic such that at above 20% concentration in mixed solvent of the composition hereinbefore described it will provide a solution below 25000 centipoises in viscosity, and comprising also a resin.

16. An article coated with a hard, durable, tough, and adhesive film formed from a composition containing a resin, a softener, and a cellulose nitrate having a low viscosity characteristic such that at above 20% concentration in mixed solvent of the composition hereinfore described it is capable of producing a solution below 25000 centipoises in viscosity.

17. A rigid article coated with a hard, durable, tough, and adhesive colored enamel formed from a composition containing a resin and a cellulose nitrate having an inherent viscosity characteristic such that at 25% concentration in a mixed solvent of the composition described in Example I the latter will have a viscosity below 25000 centipoises.

In testimony whereof, I affix my signature.

EDMUND M. FLAHERTY.

DISCLAIMER

Re. No. 16,803.—*Edmund M. Flaherty*, Parlin, N. J. Low-Viscosity Lacquer and Film Produced Therefrom. Patent dated November 29, 1927. Disclaimer filed May 26, 1932, by the assignee, *E. I. du Pont de Nemours & Company*.

Hereby enters this disclaimer to that part of said specification and claims which is in the following words: to wit: "and generally the said lacquers and solutions are distinguished over the prior art by containing a nitrocellulose whose inherent viscosity characteristic is such that at above 20% concentration in a mixed solvent of the character described in Example I, it will provide a solution below 25,000 centipoises in viscosity" (P. 3, 11. 2-9.)

"13. A composition comprising celiulose nitrate having an inherent viscosity characteristic such that at above 20% concentration in mixed solvent of the composition hereinbefore described it will provide a solution below 25,000 centipoises in viscosity, and comprising also a resin and a solvent.

"14. A composition comprising cellulose nitrate having an inherent viscosity characteristic such that at above 20% concentration in mixed solvent of the composition hereinbefore described it will provide a solution below 25,000 centipoises in viscosity and comprising also a resin and solvent to bring the viscosity of the total composition below 25,000 centipoises.

"15. An article covered with a hard, durable, tough, nonshrinking, and adhesive film formed from a composition comprising a cellulose nitrate having a viscosity characteristic such that at above 20% concentration in mixed solvent of the composition hereinbefore described it will provide a solution below 25,000 centipoises in viscosity, and comprising also a resin.

"16. An article coated with a hard, durable, tough, and adhesive film formed from a composition containing a resin, a softener, and a cellulose nitrate having a low viscosity characteristic such that at above 20% concentration in mixed solvent of the composition hereinbefore described it is capable of producing a solution below 25,000 centipoises in viscosity."

[*Official Gazette June 14, 1932.*]

Defendant's Exhibit (DP) No. 200

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February 24, 1922

Mr. G. R. Downs,

E. I. Du Pont De Nemours & Co.,
Parlin, N. J.

Dear Mr. Downs:

We are starting some rather extensive experiments on automobile finishes at our laboratory. During my recent visit at your plant, you showed me some experimental automobile finishes which you have not yet perfected to your entire satisfaction. However, since we are putting out a number of panels, representing the finishes used in our different plants, we would like very much to make an exposure test on some panels prepared with your finishes at the same time.

We are very much interested in this work and assure you that we will not allow any unsatisfactory results, due to the finishes still being in an experimental stage, prejudice the possible use of your material in a more highly developed condition.

These panels of course, are in addition to the panels in black which you are preparing for us on terne plates, galvanized iron, etc., as a substitute for the black enamel on the Delco-Light fuel tank.

We are very much interested in this work and would like to know how soon we may have the pleasure of having you visit us at our plant.

Very truly yours,

.....

Control Chemist.

HCMougey—T

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Defendant's Exhibit (DP) No. 201 6082

ADDRESS ALL CORRESPONDENCE TO THE COMPANY (SALES DEPARTMENT) AT PARLIN, N. J.

E I DU PONT DE NEMOURS & COMPANY

CHEMICAL PRODUCTS DIVISION
PARLIN NEW JERSEY

March 14, 1922.

General Motors Research Corp.,
Dayton, Ohio.

Gentlemen: Attention - Mr. H. C. Mougey

We acknowledge receipt of your telegram of March 10th and are arranging to have Mr. R. C. Williams, our chemist in charge of demonstration work on automobile finishes and Mr. E. M. Fluherty, Assistant Director of Sales, call on you at Dayton next Monday. These men will be prepared to spend several days with you and we are sending ahead sufficient material for any reasonable number of experiments. A further supply can, of course, be obtained from Parlin at a notice.

The plates are being finished today and will be shipped to you by express tomorrow. These should be in Dayton at the time our men arrive next Monday, and they will be glad to discuss them with you at that time.

Very truly yours,

J. A. Moosmann, Director of Sales,

By: E. M. Fluherty

wh/eh

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PT II

March 22, 1922

From: Commmittee Appointed to Study Enameling and Varnish Drying Practices.

To: Car Division Managers,
Mr. L. R. Beardslee, Secretary.

Subject: MINUTES OF SECOND MEETING OF THE COMMITTEE APPOINTED TO STUDY ENAMELING AND VARNISH DRYING PRACTICES.

The Enameling and Varnish Drying Committee held its second meeting in Detroit, Tuesday, March 21. With the exception of Mr. MacQuaid of the Chevrolet organization, the full committee was on hand.

To date, we have cost-accounted and processed each particular finishing job in every one of our car plants. Each car plant has prepared, by production methods, panels to be exposed in four different parts of the United States: Fort Worth, Texas; Tarrytown, N. Y.; Detroit, Michigan; and Dayton, Ohio. These panels will be subjected to exposure tests to determine durability to weather.

Mr. Bergland has made considerable progress in comparing the economic side of the various heating methods utilized in the various car plants. This work will proceed quite expeditiously henceforth. This will give us different methods of heating, costs, the temperatures required, the amount of air utilized, time, heat losses and all data that has to do with the relative costs of the various methods.

The work as planned by the committee will now be largely along the lines of laboratory work, to determine the theoretical principles that underlie the entire finishing process.

We will proceed with all expedition in exploiting the value of the two new materials that have come to our attention:

(1) The Westinghouse japans, in which the present volatile thinners are displaced completely by similar volatile thinners of the non-inflammable type. This type of material would do away with all fire hazard and would probably save thirty to forty per cent of

the heat required, due to the fact that large amounts of air now have to be heated in order to keep a mixture in the ovens sufficiently lean so as not to be explosive in nature.

(2) Material proposed by the du Pont Company. Their chemist is now at the G. M. R. C. Laboratory, working in conjunction with our organization in determining the value of this product. Briefly: it is a nitro-cellulose type of lacquer or dope, carrying large amounts of total solids. A thinner can be designed for volatility, so that it will approximate the volatilities of the thinners now in use. To date, the only way that this material has been applied is by means of an airbrush. This material is somewhat similar to the finish put upon wooden and metal articles, resembling solid celluloid. The utilization of such a material will do away almost entirely with the necessity of heat, using possibly only a few degrees above room temperature to regulate humidity.

The outstanding difficulties of the process at the present moment are whether the material will stick to the surface and not peel off and whether sufficiently high lusters can be obtained to withstand car plant inspection. Other details seem to be capable of satisfactory solution.

These two methods will be pushed with all celerity; for they have great bearing upon the entire investigation.

The Committee requests the following data, arranged in order of importance:

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(1) The amount of air, time and temperature, effect of fumes, etc. in enameling.

(2) The comparison of the different types of heat and their effect upon appearance and durability. The cost will be obtained in actual production from Mr. Bergland's figures.

(3) Is it possible to dry finishing varnish at higher temperatures than actually present? If not, why not?

(4) How clean metal?

(5) How check durability by laboratory tests?

(6) What does change in undercoats have to do with durability?

(7) Prepare microphotographs of enamels subjected to different types of heat.

(8) Flow coating versus brushing, and its effects upon gloss finish.

—3—

We consider that this committee is making real progress. From now on, the results obtained will begin to have real value. For instance, we are accumulating data like the following: every square foot of metal requires 7.3 cu. ft. of air during the evaporation of the solvents to prevent the forming of explosive mixture; after evaporation of the solvent, only one-half cubic foot of air per square foot of mixture is required to complete the oxidation portion of the process. Exact data of this kind is essential in securing the fundamentals that underlie the entire process. When we thoroughly know these fundamentals, we can begin to make plans that will save money.

Respectfully submitted,

F. O. Clements
Chairman

FOC—G

Defendant's Exhibit (DP) No. 203

6086

August 22, 1922.

Murphy Varnish & Co.,
224 McWhorter St.,
Newark, N. J.

Gentlemen:

Our laboratory is doing considerable work on paint, varnish and enamel finishes as applied to General Motors cars. We find that the standard paint finishes in which color is used are not as durable as we believe they should be. We do not think that this is a criticism which particularly applies to our own cars, since examination of the automobiles finished by other companies show that, except in the cases of those finished with black baking enamel, the durability of practically all is less than we believe it should be.

Our tests indicate that the weak links in the chain are the coats of color varnish and rubbing varnish. These materials if not protected by finishing varnish will stand exposure on our test roof about a week to a month. We believe that one of the principle reasons for the failure of finishes on automobiles is due to the fact that the finishing varnish is injured or removed in spots by washing or by other methods, exposing either a very thin film of finishing varnish over the rubbing varnish or actually exposing the rubbing varnish. In order to meet this condition, we believe it is necessary to have a color varnish and rubbing varnish which will more nearly approach a finishing varnish in durability so that after the finishing varnish is removed by wearing, the exposed color varnish and rubbing varnish will still stand up in service.

We realize that the automotive industry has demanded quick drying in the color varnish and rubbing varnish, however, at many of our plants, we are prepared to dry the color varnish and rubbing varnish by means of forced heat. At present, using a material of low durability which seems to be standard in the automotive industry, we do not allow

6087

very much time for color varnish and rubbing varnish, but if a big enough difference in durability could be obtained, we believe that this drying time would be increased.

August 22, 1922.

Murphy Varnish & Co., --2—

Does your company make any material which will enable us to finish automobiles and obtain a very much more durable finish than is now customary practice? If so will you please send us a quart each of color varnish and rubbing varnish, which you would recommend, together with a bill for same?

Very truly yours,

.....

Control Chemist.

HCMougey-T

Duplicate letters sent to firms: Valentine, Willey, Murphy, Acme White Lead Works, and Ditzler.

2893

Defendant's Exhibit (DP) No. 204

6088

LETTERHEAD OF
PRATT & LAMBERT-Inc.
73-97 Tonawanda Street
Buffalo, N. Y.

September 27, 1922

The General Motors Corp.,
Research Dept.,
Dayton, O.

(Attention Mr. F. O. Clemens)

Gentlemen:

After the interview which you were kind enough to grant our representative, Mr. L. P. Gilligan, we received a letter in detail from him, outlining the steps your department is going to take in solving and overcoming the various difficulties experienced in the finishing of automobiles.

We have had considerable experience in this respect and maintain a Research Department at present, which is devoting a great portion of its time to this problem, and within the past year or two, we believe have accomplished some very good results.

Only a few days ago, we received the steel panels sent us and will immediately finish panels in three shades with such materials that we recommend, which in our estimation, help in the building up of an automobile finish that will be noted for its extreme durability.

Panels will be ready for sending to you within the next ten days or two weeks and as soon as they are sent you in addition to liquid samples of the materials for you to make parallel tests, we will write you more fully.

Very truly yours,

PRATT & LAMBERT-Inc.
J. C. ROTH
Sales Department

JCR:LB

3894

Defendant's Exhibit (DP) No. 205 6089

November 7,1922.

Pratt & Lambert, Inc.,
Buffalo, New York.

Attention Mr. J. C. Roth, Sales De t.

Gentlemen:

A short time ago you wrote to us concerning automobile finishes, and mentioned the fact th t your Research Department has been doing some good work toward improving the durability of these finishes.

You also promised to send us some panels and samples showing some of the results you had obtained, since we also are keenly interested in these results as well as the entire problem of automobile finishes, we sincerely trust that you will continue to bear us in mind when the samples are ready to be submitted.

Yours very truly,

H. C. Mougey

Control Chemist.

By

3895

February 23, 1923

Mr. L. V. Pulsifer,
Valentine & Company,
456 Fourth Ave.,
New York, N. Y.

Dear Mr. Pulsifer:—

When you were here this week we discussed the matter of your preparing for us test panels showing the most durable finish which you can possibly prepare on a schedule taking the same number of coats and the same number of days as the present Cadillac schedule.

We discussed sending you samples of the Cadillac material to use as standards for comparison. We believe that it would be very much better if we could arrange to get some tests on cars made at the same time the panels are finished. For this reason we suggest that instead of finishing these panels, you send us your schedule for finishing a Cadillac car, using your materials and using approximately the same number of coats as the Cadillac Company now use, and taking no longer to completely finish the car than the Cadillac Company now take. Also, please send us the experimental test panels which you prepared about a year ago.

On receipt of this material we will try to arrange with the Cadillac Company to get a few cars finished with your material on your schedule.

Yours very truly,

H. C. Mougey,
Control Chemist.

M:B

#2967 Grand Boulevard,
Detroit, Mich. Oct. 2, 1923

Mr. H. C. Mougey, Control Chemist,
General Motors Research Corp.,
Dayton, Ohio.

My dear Mougey:—

I was informed to-day by a representative of the Ault and Weiborg Company that they had taken at order at Olds for about 200 gallons of what is claimed to be "color enamel".

I was told that the colors were maroon, blue and gray and in addition to these colors, a primer, putty and surfacer was to be used. The baking temperature of the base coats was said to be about 300 deg. F. while the colors coats were to be baked at 225 to 250 deg. F. Upon questioning the salesman—over the phone—he said that these temperatures might have to be about 210 or 225.

I asked him to furnish me with samples of the very best color materials they made and he rather reluctantly promised to send me some. When these arrive I will shoot them on to you and you can put them through your "mill". I believe, however, that it would be a good plan for you to get in touch with their factory at Cincinnati and get after this material.

I have seen some of their maroon "color enamel" used on Buick sport model cowl lights and it was baked at about 250 deg. F. for 1½ hours. After some service many of these lights turn black whether due to the heat from the lights or to the material I cannot say.

It seems to me that when any of those paint companies have something good they should be only to glad to have you people pass on it. If it is good, they won't have to advertise it, we will attend to that for them.

Very truly yours,

R. S. KAVANAUGH

Defendant's Exhibit (DP) No. 208

6092

November 19, 1923.

J. L. Armitage Co.,
Newark, N.J.

Gentlemen:-

As you know, our laboratory is very much interested in the possibility of obtaining more durable finishes for automobiles. We have heard that your Company has developed color enamels which may be used in place of the regular color and rubbing varnish and may either be used with or without finishing varnish over them, baking the color enamels at fairly high temperatures for comparatively short times.

We are very much interested in this development and would like an opportunity to test this material. Will you please send us pint samples of several of these enamels with instructions for their use? Please send us a bill for this material and we will cover it with an order.

Yours very truly,

H. C. Haagen,
Control Chemist.

H:B

3898

Defendant's Exhibit (DP) No. 209

6093

September 12, 1924.

The Tokiol Paint & Varnish Company,
Tackawanna & Womrath Sts.,
Philadelphia, Pa.

Gentlemen:—

In "Motor Vehicle Monthly", September, 1924, we notice an advertisement for permanent high gloss quick drying varnish and in the same magazine there is an article by one of the commercial refinishers claiming that your finishing varnish dries hard in two hours and is durable on exposure.

We are very much interested in material that will do what is claimed for your material and we would like very much to receive samples.

Yours very truly,

H. C. Mougey,
Control Chemist.

M:B

3899

EXCERPT FROM THE MONTHLY REPORT OF THE CELLULOSE PRODUCTS DEPARTMENT TO THE EXECUTIVE COMMITTEE FOR APRIL 1922, DATED MAY 15, 1922.

PROMOTION WORK

The most important promotion work was the further development of pyroxylin enamels for new automobiles. The General Motors Research men with whom we are working had asked us to concentrate first on the problem of adhesion. This problem was solved to their complete satisfaction when we demonstrated that on a freshly sand-blasted surface excellent adhesion is obtained when our automobile enamels are sprayed on directly without any intermediate cost.

Because of the progress made in this respect the General Motors people wished to start collecting data on the durability of our materials at once. At their request we finished the bodies of three new Buicks at the Flint Plant. They are to go on service cars used around the factory and the wearing qualities of the enamel will be carefully observed.

We still have before us the problem of final finishing. They practically demand a flow coat because this is not only the cheapest method of application but it gives a new look to a car not possible, apparently with any method of spraying. But flow coating as they practice it with paints and varnishes brings up a serious fume question with enamels and we shall exhaust every other possibility before recommending it. Our work at Flint and Dayton in April raised a number of questions which will be worked on in the Parlin laboratory before another visit is made to Dayton.

6095

Defendants' Trial Ex. No. ———

Several demonstrations of our refinishing process for old cars were made at Parlin during April for painters who came here at their own expense. Only two outside demonstrations were made because the General Motors work is taking all of the time of the men available. An apparent fault in our process developed on several cars refinished recently and was the subject of complaint from one customer. The Silex in our intermediate coat works thru and not only roughens the top surface but in some cases actually shows white spots in it. This difficulty should be worked out before we exploit the process any further.

A few sales, mostly trial orders, were made of our new dip white enamel. A demonstration for one of the largest buyers will be made at Parlin within a few days. We have great confidence in this enamel and are urging our salesmen to push it.

3902

2

Defendant's Exhibit (DP) No. 211

60996

PAINT AND ENAMEL COMMITTEE:

Minutes of Meeting held in Mr. Borgland's office, General Motors Building, Detroit, Thursday, October 5, 1922 at 9:30 a.m.

Those present were:

Messrs.	Rogers	Oakland Motor Car Company.
	Bartholomew and Kidd	Olds Motor Works.
	Jamison,	Chevrolet Motor Company
	Flaherty,	duPont Company
	Voehler,	Buick Motor Company
	Priebe, Vidmer and Pease, of	Cadillac Motor Car Company
	Borgmann,	of Mr. Borgland's office.
	Philips,	of Mr. Barton's office.
	Clements and Mougey,	of the Dayton Laboratory.

A preliminary study was made of the various car unit finishes, which have been on the roof at Dayton, subject to exposure tests, since May 20, 1922.

Mr. Flaherty, of the duPont Company, was present by invitation, to discuss the status of the duPont materials, called 'Duco' enamel.

All of our car units, with the exception of the General Motors of Canada, have finished cars with this type of material; some fifteen being on service tests and part of them having had four months of service.

Three considerations are of prime importance in discussing this new material: adhesion, durability and final finish.

It seems to be the consensus of opinion, that if the metal parts were free from rust and grease, and were sand-blasted, that no trouble would be experienced from peeling, cracking or chipping. Some of the companies are putting this material on over their customary paint primers; the only precaution necessary being to see that the primers are baked at high temperatures, so as to be hard and dry, thereby preventing the subsequent 'Duco' enamel coats from softening the under coats.

6075

Characteristics of Pyroxylin Enamels and their Application

(Continued from page 53)

of the companies now using "Duco" made its first deliveries by freight and subsequent deliveries to a western distributor over the road. The latter cars went through hard rains in the fall and arrived with a heavy coating of the worst gumbo mud. Such treatment in the past had always meant refinishing and the distributor wired into the factory at once that the cars would have to be returned to be done over. The factory replied with a suggestion that he wash off the mud, and the next day received a telegram from him asking that all his cars in the future be driven over the road because after washing them he said they were actually superior in appearance to those that had been coming by freight.

In factory practice we do not recommend the use of "Duco" directly on steel. It can be done when the steel is cleaned perfectly, but this cleaning is difficult and expensive, because any oil occluded in the steel will spoil the adhesion of the "Duco." For surfacing purposes we recommend the usual types of primer and roughstuffs or surfacers with the precaution, however, that they must be thoroughly oxidized before the first coat of "Duco" is applied. Unless this oxidation is complete the solvents in "Duco" will act as a paint remover and leave a soft spot down the metal. In other words, "Duco" should be considered as a substitute for color varnish, rubbing varnish, and finishing varnish, in the present schedules.

Sprayed and Air-Dried

"Duco" is applied by air spray, which is economical, rapid and very easily learned. With some colors two coats are sufficient, although three coats are necessary in the case of those colors more transparent by nature. With skillful spray work the final coat will have a flat but even surface, and we are finding a number of manufacturers who feel that this type finish is likely to become very popular in the future and are

one department and bodies at another time or in another department. It has been very difficult to get the hoods and the bodies sufficiently close in color if artificial heat was used in drying the color-varnish, and if heat were not used the painting of these cars took so long that production was seriously curtailed. "Duco" when dried by air or with mild heat does not change at all in shade, and there is no difficulty at all in matching hoods and bodies even though they may have been finished at different times.

By permission of the Oakland company I shall now outline methods and cost figures this company has worked out in its use of "Duco." All open models of the 1924 Oakland are finished in "Duco," and practically all closed models manufactured since early in December.

Oakland Finishing Method

At the Oakland factory a priming coat of oxide metal primer has been used with either air or oven drying. In the oven drying a temperature of 250 degrees Fahrenheit for 80 minutes is used, and if the ovens are not used, 24 hours in warm room temperature was the practice. Oven drying was finally standardized on both for the saving in time and because it was found that superior durability resulted.

After the priming coat spot glazing is done in the usual manner, while the bodies are still warm, and sand surfacer immediately applied. One baking coat then at 250 degrees Fahrenheit for 80 minutes thoroughly oxidizes both the glazing and the surfacer.

The next operation is a wet sanding of the surfacing coat, following which, after rubbing dry with cloth, the first coat of "Duco" is applied by air spray at 40 pounds pressure. Thirty minutes at 125 degrees Fahrenheit is allowed for drying this coat, and after 15 additional minutes for cooling, a second coat is applied in a similar manner. This second coat, when it is to be the final coat, is allowed to dry overnight in a room with an air temperature between 75 and 80 degrees Fahrenheit. At this point the finish has the wavy or pebbly appearance characteristic of spray work, although the more skillful opera-

S. A. E. Summer Meeting

The technical program of the summer meeting of the Society of Automotive Engineers at Spring Lake, N. J., June 24th-27th, consisted of sessions on riding quality, oil dilution and contamination, new transmission systems, and air cleaners.

Shock absorbers, tires, spring design and instruments which record the riding quality of a car were the subjects discussed at the session on riding quality. At the session on oil dilution and contamination the causes and effects of dilution and contamination were set forth and Ralph L. Skinner, inventor of the oil rectifier adopted by the Rickenbacker Motor Co., Detroit, presented the history of the development of that device. The possibility of improving the sliding-gear transmission and the possibility of dispensing with transmission gears entirely were subjects of papers at the session on new transmission systems. At this session an unconventional universal-speed transmission and an automatic-shift gear transmission also were described and demonstrated. Air cleaners were treated from different viewpoints and methods of testing them were described at the session on those contrivances.

A meeting of the Standards Committee, at which recommendations relating to automobile chassis and airplanes were considered, and the semi-annual business meeting of the society, which was addressed by H. M. Crane, president of the society, were held. Outdoor sports occupied a prominent position on the general program.

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been reduced to 5.715 hours with the "Duco" system. The cost of materials was $2.33 per body, and it has been reduced to $2.26, using "Duco."

These are very important savings to a factory in large production, and it should be remembered that with them is produced a finish that in durability is decidedly superior than its more expensive predecessor. The saving in floor space resulting from the increased speed in which "Duco" can be applied is also an important feature at Oakland. It took over 101,000 square feet of

(3- Minutes of Meeting held in Mr. Borgland's office)

Quite a number of the little troubles that have arisen in connection with this new material, were discussed at length and much good resulted therefrom.

We know nothing of the durability of the 'Duco' enamel, due to the fact that this is a modification of the Viscolac and no exposure tests have been made, so far. The 'Duco' enamel covers better, evaporates somewhat slower, and can be handled to better advantage in a number of particulars. It is very much more brittle than the Viscolac enamels which we have tested.

Mr. Wechler, and the boys at the Buick, have worked out a wax type of finish that seems to give a very high gloss and overcomes the difficulties that have been experienced heretofore. We propose patenting this special wax finish.

In order to push our program ahead with rapidity, the following action was taken by the committee:

(1) The duPont Company is to furnish a man who will stay in the Detroit district, so as to be available wherever needed;

(2) Mr. Barton, of Mr. Borgland's office, is also to furnish a man, representing the General Motors Corporation, who will work with the various plants in processing the application of the 'Duco' enamels and studying both the time required and the cost, along with the processing;

(3) The duPont Company's man will be able to interpret back to his organization, at Parlin, New Jersey, any changes that are necessary to make the materials still more satisfactory;

(4) Mr. Clements, of the Dayton Laboratory, is to see Mr. Pierre duPont, relative to an option on material for a reasonable length of time. This was deemed desirable and, at the same time, reasonable, due to the fact that we have put a lot of time upon this finish and have helped the duPont Company to work out methods of application. It seems to us that we should

(3-Minutes of Meeting held in Mr. Berglund's office)

have some rights that would prevent others from capitalizing on our research and adopting the material prior to ourselves.

(5) Each of the car units agrees to put out quite a number of cars under well controlled conditions;

(6) The two men mentioned above, will keep in close touch with all conditions and, at the same time, see that definite reports are sent to the main committee, at least, once a month, giving the condition of each car put through with this new finish.

The Fisher Body Corporation folks have been invited in at most of the meetings. To date, no attention has been paid to the General Motors of Canada. It may be wise to process both of these jobs and to prepare panels for exposure on the roof.

In connection with this new finish, it seems desirable that part of the money spent on finishing, be put into the bodies themselves. This means better materials, better workmanship and a smooth body prior to the sand blasting operation.

The committee is counting on pushing this matter through to an early decision. However, we must be sure of each step and not do anything that would hazard the welfare of any of our car units.

This program, as outlined above, starts immediately.

H O. Almonte
Chairman

Defendant's Exhibit (DP) No. 212

60599

October 16, 1922.

Mr. P. S. duPont, President,
General Motors Corporation,
224- W. 57th Street,
New York, New York.

Dear Mr. duPont:

This is to serve as a reminder of our conversation relative to the duPont enamels, called 'Duco'.

You were to discuss this matter with your brother, Irenee, to see whether we could not have some kind of an option on the use of the material, at least, until all methods of application were completed.

As I told you, this material looks very promising: but we must be certain of every step. The production of the material and its utilization, go hand in hand and I am sure that the duPont boys will admit that we have helped them very materially in getting the product ready for the market.

It behooves both organizations to see that the material is right before the production proceeds very far. For that reason, we feel, that the duPont Company should not negotiate with other companies relative to the use of this material, until a reasonable time has elapsed, permitting the assurance of high service which is necessary to the success of the finish.

To bring the matter before you with the utmost degree of clearness, I am attaching a copy of the last report of the Enamel and Varnish-Drying Committee, and trust that this can be worked out to the satisfaction of all concerned.

Yours very truly,

Director of Research.

KOC-M.

1-Encl.

3905

Defendant's Exhibit (DP) No. 213

6100

EXCERPTS FROM THE CELLULOSE PRODUCTS DEPARTMENT MONTHLY REPORT TO THE EXECUTIVE COMMITTEE FOR MARCH, 1923, DATED APRIL 23, 1923.

P-3

EXPERIMENTAL WORK:

The operation of the small works equipment for treating 700 pound powder charges, to be utilized in dip and furniture Viscolac has been continued, and no difficulties have been encountered.

Work on the use of pyroxylin materials for preparing automobile surfaces for refinishing before the application of Duco enamels has been continued. A number of automobiles have been finished by this method and excellent surfaces have been obtained.

P-6

PROMOTION OF NEW LINES (MANUFACTURE AND/OR SALES):

During March it was learned that Oakland has decided to use Duco, in place of color varnish, on all open cars of the new model which goes into production July 1st. Best available estimates indicate a minimum consumption of 4,000 gallons during the last half of this year. Black will be used and special efforts are being made to satisfy Oakland with a black that will be free from the tendency toward a purplish coat which is characteristic of our present product. Three modifications of the present black have been sent to the Oakland factory and one of our technical men is on the ground to follow up tests with them.

Franklin has decided to put out one Duco finished car per day and have ordered 75 gallons of their standard green in Duco to start this work. Officials of the Franklin

Company are highly pleased with Duco and express confidence in the complete replacement of color varnish with Duco within a short time.

P-7

Cadillac ordered 25 gallons of Duco during March which evidently means that they plan to put out several additional Duco finished cars.

As a result of visits to automobile plants in the Cleveland district, arrangements have been concluded for demonstrations as soon as the necessary material can be shipped. These demonstrations are scheduled for Jordan, Chandler, Cleveland, Peerless and Land Body Company (manufacturer of Lincoln bodies). In addition to these demonstrations already arranged, requests for demonstrations have been received from Reo, Lincoln, Apperson and Bay State.

Parlin and Flint Varnish & Color Works are cooperating in the development of a complete automobile finish for use with Duco. Higher grade primers, rough stuffs and finishing varnishes are needed to produce a long lived high gloss finish, and a Parlin technical man will make tests at the Flint Laboratory on their primers, rough stuffs and varnishes in connection with their use with Duco. Similar tests will also be made at Parlin.

The carload of powder base leather dope shipped to Eagle Ottawa Company, as noted in this report under "Sales", is a tangible result of our campaign among the leather manufacturers. This order was secured after tests which proved satisfactory. A carload of this material was shipped to Ashtabula Hide & Leather Company in February and they report that it is working satisfactorily. General Leather of Newark have been interested in powder dope and have one drum for trial.

3906 A

Viscolac and Duco are now standard with White Furniture of High Point and they are using as a sales argument the improved finish secured with our materials.

Tests on the new cheap powder base Viscolac, where completed, have been successful and it is planned to offer it to the trade generally as soon as arrangements can be completed to manufacture in quantity.

After a satisfactory test period, the Draper Company,

Hopedale, Mass., recently finished 5,000 bobbins with Viscolac. These will be put in actual service to determine whether or not the finish stands up under mill conditions. Tests have already shown that it has the necessary water and steam resisting qualities. This firm has an output of around 750,000 bobbins per week, being one of the largest in this line, and the test will be closely followed in an endeavor to secure the large business which would result from the adoption of Viscolac as a finish for these bobbins.

During March it was decided to have one man from the Parlin Office concentrate on General Electric Company business. This Company, at its nine plants, is a large consumer of lacquers and enamels, but competitors have enjoyed all but a small portion of their business. On the first visit to their Schenectady headquarters our representative demonstrated the marked superiority of Duco over a competitive black enamel in use at the Schenectady plant. It is expected to lead to this business coming to us in future. Arrangements were made for visits to the other plants in the near future.

3906 B

Defendant's Exhibit (DP) No. 214

EXCERPT FROM THE MONTHLY REPORT OF THE CELLULOSE PRODUCTS DEPARTMENT TO THE EXECUTIVE COMMITTEE FOR SEPTEMBER, 1923, DATED OCTOBER 27, 1923.

—P-6—

PROMOTION OF NEW LINES (MANUFACTURE AND/OR SALES):

Duco for Automobiles

The campaign to promote the sale of Duco is now producing more tangible results. Orders from Oakland in September amounted to $45,000. Active interest in this finish is also noted from other prominent automobile makers. Our own efforts have been supplemented by remarkable free publicity in the trade journals.

It was learned that during September the Franklin Company received orders from various sections of the country for 15 cars on which customers specified Duco finish. This is ascribed to this publicity and the appearance of the Duco finished Oaklands.

Franklin, Chandler, Moon, Jordan and Cleveland are the most active companies (outside of General Motors) experimenting with Duco at present. The prospects for selling Cleveland at an early date are good. Demonstrations at Hupp and Moon were successful and both have asked for assurance that an uninterrupted supply of Duco in the required quantities is available.

The solvent situation is the fly in the ointment. This necessitates confining promotion work to those companies who have asked for demonstrations and not offering Duco to the trade in general.

Oakland is using Duco exclusively on their open models

and is asking Fisher Body Corp. to use it on Oakland closed bodies. Gradual improvement is noted at Oakland in the finish obtained with Duco as the workmen become more skilled in handling it. Slight modifications in the formula are also adding to the appearance of the finish and probably to its durability.

Any apprehension that may have been felt by General Motors and Parlin as to the reception by the trade and the public of the satin semi-gloss finish with Duco on the Oakland cars is dispelled by the enthusiastic reports from Oakland distributors from all over the country and the repeated urgings that Duco be used on the closed as well as the open models.

A renewal of interest in Duco is noted at both Olds and Buick. About 10 cars per day in Duco are planned by Buick in order to hold the interest of their men and to gain experience in the handling of Duco and learn more about its qualities.

Duco to match a new weathered bronze shade desired by Olds for sport models has been submitted and will probably be used in October. Olds hopes to attain the sales of 50 sport models per day in this color.

The publicity given Duco has also resulted in wide spread interest in the refinishing field. This is somewhat embarrassing as no way has yet been developed of serving this trade economically. The annual sales to even a large firm in the refinishing business are so small and the proper application of Duco involves such training even after the first demonstration that the expense of handling these accounts is prohibitive. Duco prices to the refinishers already

established have been advanced nearly 50% to $5.75 per gallon.

During September a substantial order was received,

for Viscolac from Fisher Body Corporation's Cleveland plant. This product is also used at the St. Louis and Detroit plants in finishing wood mouldings on closed cars.

Note:

Page 6106 is on card 56.

spoil the adhesion of the "Duco." For surfacing purposes we recommend the usual types of primer and roughstuffs or surfacers with the precaution, however, that they must be thoroughly oxidized before the first coat of "Duco" is applied. Unless this oxidation is complete the solvents in "Duco" will act as a paint remover and leave a soft spot down the metal. In other words, "Duco" should be considered as a substitute for color varnish, rubbing varnish, and finishing varnish, in the present schedules.

Sprayed and Air-Dried

"Duco" is applied by air spray, which is economical, rapid and very easily learned. With some colors two coats are sufficient, although three coats are necessary in the case of those colors more transparent by nature. With skillful spray work the final coat will have a flat but even surface, and we are finding a number of manufacturers who feel that this type finish is likely to become very popular in the future and are now putting out their show cars in it. Those requiring a greater degree of luster than this can secure it by rubbing down and polishing the last coat, and if a varnish luster is absolutely essential it may be obtained by a coat of good finishing varnish over the "Duco." This we do not recommend, however, as many of the desirable features of the "Duco" finish are then lost to the car owner, since varnish even over "Duco" will have most of its present characteristics, although it will last from two to three times as long over "Duco" as it will over color varnish.

The fact that "Duco" air-dries without changing color gives it an additional advantage for cars finished in delicate colors, such as maroons, which are thrown off shade by heat. You are all familiar with the difficulties in using maroon and similar color varnishes in those factories where it has been the practice to finish hoods at one time or in was the practice. Oven drying was finally standardized on both for the saving in time and because it was found that superior durability resulted.

After the priming coat spot glazing is done in the usual manner, while the bodies are still warm, and sand surfacer immediately applied. One baking coat then at 250 degrees Fahrenheit for 80 minutes thoroughly oxidizes both the glazing and the surfacer.

The next operation is a wet sanding of the surfacing coat, following which, after rubbing dry with cloth, the first coat of "Duco" is applied by air spray at 40 pounds pressure. Thirty minutes at 125 degrees Fahrenheit is allowed for drying this coat, and after 15 additional minutes for cooling, a second coat is applied in a similar manner. This second coat, when it is to be the final coat, is allowed to dry overnight in a room with an air temperature between 75 and 80 degrees Fahrenheit. At this point the finish has the wavy or pebbly appearance characteristic of spray work, although the more skillful operators are learning to put on this coat with a minimum amount of spray wave in it.

After the overnight drying of this coat the bodies are rubbed with sandpaper and a mixture of boiled linseed oil and gasoline. Then, without removing the oil, dry rotten stone is sprinkled on the body and the surface rubbed to the desired luster. At this point, if inspection shows any surface indentations, they are bumped out, usually without harming the "Duco" finish in any way.

Striping is now applied by standard methods using varnish-type materials, and the entire surface waxed. This waxing is done mainly to protect the stripe, as it adds very little if anything to the appearance of the "Duco."

Under the old paint schedule it required 336 hours to paint an Oakland body, while with "Duco" this time has been cut to 13½ hours. Labor time with conventional materials was 6.728 hours per body, which has methods of testing them were described at the session on those contrivances.

A meeting of the Standards Committee, at which recommendations relating to automobile chassis and airplanes were considered, and the semi-annual business meeting of the society, which was addressed by H. M. Crane, president of the society, were held. Outdoor sports occupied a prominent position on the general program.

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been reduced to 5.715 hours with the "Duco" system. The cost of materials was $2.33 per body, and it has been reduced to $2.26, using "Duco."

These are very important savings to a factory in large production, and it should be remembered that with them is produced a finish that in durability is decidedly superior than its more expensive predecessor. The saving in floor space resulting from the increased speed in which "Duco" can be applied is also an important feature at Oakland. It took over 101,000 square feet of floor area to paint 300 bodies per day when paint and varnish were used, while with "Duco" this has been reduced to about 73,000 feet; 2,400 bodies formerly were tied up in the painting department, while now only 600 bodies are going through at one time. Oakland's experience was that about 20 per cent. of the daily production was rejected by the inspectors because of finishing trouble, but since "Duco" has been adopted this rejection figure has been reduced to 2 per cent.

There is, therefore, a saving in direct cost, a saving in investment in finished bodies, and a saving in factory space required by the finishing department when "Duco" is used in place of conventional materials. In addition, there is certainly an intangible good will rapidly built up among automobile users when they have no cause to complain on the finish of their cars. "Duco," we feel, represents a real advance in the art of finishing.

3881

Defendant's Exhibit (DP) No. 216

6107

FLINT VARNISH AND COLOR WORKS

SALES TO BUICK AND TO FISHER BODY

AND

BUICK AND FISHER BODY PRODUCTION

1923 AND 1924

	1923	1924*
Flint Sales to Fisher	$60,402.92	$50,222.72
Fisher Production (in units)	248,368	347,902
Flint Sales to Buick	$711,510.73	$426,855.93
Buick production (open cars)	124,048	84,056
Buick production (closed cars)**	75,952	76,355
Total	200,000	160,411

* Flint Varnish and Color Works dissolved October 31, 1924; sales are for 10 months only.

** Buick finished fenders and hoods on this production.

Source:
Flint Sales - Treasurer's Department, E. I. du Pont de Nemours & Co.

Car and Body Production - Fisher Body Corporation and General Motors Corporation.

3911

May, 1953.

E

Defendant's Exhibit (DP) No. 217

Defendants' Trial 6108

Serial No. SU-135
April 29th, 1918.

EXECUTIVE COMMITTEE,

Building,

Gentlemen:

I am handing you herewith report of the Excess Plant Utilization Division on the Paint and Varnish Industry. The report appears to be very voluminous but it was thought advisable to include the completed detailed study for those who wished to read it. For those who wished the facts only the first seven pages will cover this.

Yours very truly,

R. R. M. Carpenter,
Vice President.

—1—

Serial No. SU-135
April 24th, 1918.

To:
Mr. R. R. Carpenter, Vice President
FROM:
Excess Plant Utilization Division
(Development Department)

THE PAINT and VARNISH INDUSTRY

This report has been prepared in response to a resolution of the Executive Committee on December 29th, 1917 authorizing the Development Department to institute a very careful survey of the condition of the mixed paint and varnish industry, in accordance with the recommendation in the report of this Department (S-716) on The Purchase of The Lowe Brothers Company.

The questions to be determined are whether the mixed paint business is one in which the du Pont Company can profitably engage, and whether the future of the industry warrants the purchase of the Lowe Brothers Company. It was also a question whether the mixed paint business holds sufficient promise to warrant further investment on the part of our Company.

It may not be amiss at this time to review briefly the steps which have led up to the present relations of our Company to the paint and varnish industry.

In previous reports of this Department on the subject of excess plant utilization it was determined that the paint and varnish business was a large and substantial industry in this country and was a large consumer of raw materials, the manufacture of which was a logical development in our plans for new lines of business.

It was recommended that the paint and varnish industry

should be accepted as a suitable extension of operations at Parlin as soon as practicable and an apparently profitable plan could be developed. As Parlin was already engaged in a profitable manufacture of spirit lacquers, the manufacture of varnish was considered a related line of activity.

The Executive Committee in their Advice of Action of August 22nd, 1916, favored the development of the paint and varnish industry, preferably by the acquisition or purchase of one or more suitable going concerns, provided that a complete study should demonstrate the fact that a satisfactory return on the investment could be secured. The general trend of the previous conclusions indicated that the varnish industry was quite profitable and the paint industry was moderately profitable.

The first step in the purchase of outside companies for purpose of excess plant utilization was the acquisition of Harrison Bros. & Company, Inc. and its related companies, Cawley Clark & Company, Beckton Chemical Company, Lithopone manufacture—an important pigment at Harrisons—was under control of the Beckton Chemical Company, of which Cawley Clark & Company, dry and pulp color manufacturers of Newark, N. J. held the minority stock interest. Part of the lithopone manufacture was conducted in their color factory at Newark. The desirability of absolute control of lithopone manufacture and evidence that the Cawley Clark color plant would be profitable and were desirable as a source for important raw material, i.e. dry colors which Harrisons did not make, brought the purchase of this company, carrying with it complete control of the Beckton Chemical Company. It was also desirable on the other hand because Cawley Clark would be large users of raw material that Harrison did make, i.e. sulphuric acid, acetic acid, alum and blane fixe.

We were enabled to assume an important position at once in the chemical and color business of the country, in fact, only one other concern, namely Sherwin-Williams, is in a similar position of being as large a pigment and color as well as a paint manufacturer.

The various steps taken and conclusions drawn relative to the acquisition of Harrison Bros. & Company, Inc. have been correct, but certain factors now obtain which have brought certain differences in the trade to be reached not evident at that time.

At that time, however, it was realized that the chemical and acid business had made such strides since 1914 that the

3914

paint and varnish end had become the minor portion instead of the major portion. The anticipated profits for 1917 were based chiefly on the chemical manufacture and the whole purchase was such that it could be recommended without using the paint and varnish end, although it was considered to have produced a reasonable profit. It was understood at the time of purchase that we would have merely a good foundation for the development of a pigment and a paint and varnish business. As the policy had already been laid down that in general it was better to purchase a going business than to attempt to start with none, some attention was given to the business of the Bridgeport Wood Finishing Company which was offered to us. This proposition did not involve additional real estate and offered a new and original feature in the marketing of paints, varnishes and wood stains, namely "the lumber propaganda" which recently was explained in a previous report on the purchase of that concern.

The paint and varnish industry is divided very sharply into the two lines; the paint industry and the varnish industry. To-date, they have each played their own game and the present conditions to be understood must be taken up separately.

While the specific question for this study was an analysis of the mixed paint business, it has been found necessary to include the varnish business as well, in order to draw the proper conclusions.

In order to most economically market a *dealer* line of paint and varnishes it is necessary to distribute their manufacture at strategic points in the country. We have already proved this to some extent by the operation of our Chicago works, but this is only a step. To properly cover the country there should

be plants for example at Boston, vicinity of New York, Philadelphia, southern Ohio, Chicago, St. Louis or Kansas City, Minneapolis, Memphis or similar southern locations and San Francisco.

There is no doubt that with our skill and experience such a campaign could be consummated if suitable plants were acquired, but there is no indication that there would sufficient profit result from operations to pay for the promotion work and maintain even a ten percent return on the investment.

Although there is now a large gross profit over mill cost and a small net profit, it does not indicate that the gross profit will remain, in fact the present selling prices seem merely sufficient to cover the expenses above mill cost with no attempt to include an adequate profit. There is some talk between a few of the larger national distributors to attempt to hold to higher prices than formerly as raw material cost recedes, but this merely holds the umbrella as it were over the small manufacturer and enables him to stay in business.

We conclude that the small or local mixer will always be an important influence and factor in the trade.

A different state of affairs obtain in the industrial line of sales. This is handled mostly by contract with the consumer or on order so the manufacturer is protected. It gives an opportunity for merit and technical skill in furnishing goods for special requirements. Also the merchandising is similar to our other goods as fabrikoid, pyroxylin lacquers, pigments and chemicals, in that it is with industrial customers. There is no detail which increases with the volume of business as in dealer business. The question of

distribution, however, is a factor, and as concluded in the dealer portion, it is necessary to have strategically located plants.

The profits from this class of business have been satisfactory with both small and large manufacturers and with a combination as above suggested the large manufacturer will have then the advantages of the small manufacturer.

The gross margin is smaller in industrial lines but the net profit is greater. After the close of the war there will be a tremendous demand for all kinds of industrial paints and varnishes

for rejuvenating equipment of all descriptions, and while there are industrial lines that have no appreciable profit, there will be sufficient attractive lines to warrant attention.

It is concluded therefore than an expansion of the industrial line in which Harrisons already has a very satisfactory portion of its business is warranted. It should be observed, however, that Harrison does not have anything like the proper percentage of the industrial business that is most profitable. This can be accomplished by purchasing very much smaller establishments than in the dealer line. The plant, formulae and customers are much more important than a wide distribution and well known trade name.

It is also believed that an addition of one or more smaller plants at a proper price can carry later a line of dealer goods manufacture, but in the meantime data can be collected from our own operations to show the need.

We believe that our future progress in the dealer line should be so planned that a definite arrangement of Harrison and Bridgeport dealers and branch connections will result in the return within a reasonable time of the pro-

motion and advertising expense and that expenditures on a scale greater than this are not warranted at present.

This will result in our making industrial sales the main idea and the dealer lines to be developed as they will. It is also concluded that if our present dealer business does not show a satisfactory profit over and above all expenses after we have operated it a sufficient length of time, (by the end of 1918 we should have adequate cost figures) that it be sold to the Sherwin-Williams Company. The writer has had a preliminary verbal offer to buy our business from Mr. Cottingham, President of that company.

From an inspection of the earnings of twenty-nine companies which we have had an opportunity to examine with a view to purchasing, during the last year, we conclude that the mixed paint and varnish business as far as trade sales are concerned does not offer an attractive proposition.

We have concluded that next to well located branch fac-

tories the strategical location of warehouses is the best solution of the mixed paint distribution. However, this does not permit any expansion of the industrial lines.

Being therefore of benefit only for the trade sale, it is essential that the maintenance expense be reduced by combination with our other products or we have no advantage over competitors. Accordingly we conclude that the mixed paint business should not be made the main reason for the establishment of a branch office or warehouse, but if our other lines of business can support a branch warehouse by themselves, then the paint line can be added provided it will only be required to bear a small portion of the maintenance expense.

From our experience during the past year in operating

our businesses it appears that if it is found advisable to add one or two small industrial factories we should not attempt to assimilate them into the company before 1919.

Net profits on investment are shown as follows under four classes of sales; paint manufacturers with national distribution business being principally dealer trade:

Acme White Lead & Color Works	7.6%
Adams & Elting Company	8.0
Devoe & Raynolds Company	5.3
Lowe Bros.	10.4

Three typical paint manufacturers with limited area of distribution and business being part dealer trade and part industrial:

Campbell Glass & Paint Company	9.0%
W. W. Lawrence Company	10.7
New England Oil, Paint & Varnish Co.	11.0

Three principal varnish manufacturers with their business being part industrial and part dealer trade:

Glidden Varnish Company	12.4%
Boston Varnish Company	18.5
Pratt & Lambert	19.0

Three typical varnish manufacturers with their business entirely industrial or through jobbers and in limited area:

Armitage Varnish Company	23.3
National Varnish Company	21.1.
Nubian Varnish Company	20.0

RECOMMENDATIONS:

I. That we do not purchase the Lowe Bros. Company.

II. That we expand our industrial paint and varnish business and if opportunity presents by the possible acquisition of one or more small companies of suitable characteristics and at a suitable price.

III. That the prospects and earnings of the dealer line of paints and varnish do not warrant further expansion of that line.

APPROVED BY:

W. S. Carpenter, Jr.

PREPARED BY:

F. S. Mac Gregor

NOTE: Gmc 1454 appears in the lower left hand corner of each page of the document. On the sixth page 12.9 has been crossed out and 18.5 has been inserted.

3920

Defendant's Exhibit (DP) No. 218

6117

SERIAL NO. SU-186.
APRIL 23, 1918.

EXECUTIVE COMMITTEE,
Building.

Gentlemen:—

I hand you herewith report of Development Department on the Flint Varnish & Color Works.

Very truly yours,

R. R. M. Carpenter,

VICE PRESIDENT.

3921

TO: MR. R. R. M. CARPENTER, VICE PRES.,
FROM: DEVELOPMENT DEPARTMENT.

SERIAL NO. SU-186.
APRIL 23, 1918.

FLINT VARNISH & COLOR WORKS.

In accordance with your resolution of April 19th authorizing the purchase of a part interest in the Flint Varnish & Color Works of Flint, Michigan at the rate of $120 per share and the Flint Varnish & Color Works of Canada at $100 per share, Mr. R. R. M. Carpenter has effected this purchase as advised in the following letter received from him from New York:—

"Mr. W. W. Mountain,
Waldorf Astoria,
New York City.

April 22, 1918.

Dear Sir:

Confirming our conversation of this afternoon it is understood that you will send to me at Wilmington 7000 shares of the common stock of the Flint Varnish & Color Works,
the price to be $120. per share
also 2000 shares of the common stock of the Flint Varnish & Color Works of Canada,
price to be $100. per share.

I understand that it is your recommendation (and in this I concur) that the remaining stock of the Flint

Varnish & Color Works of Canada be left with Mr. McLaughlin, that Mr. Wyllys is to retain 500 shares of his common stock, you are to retain 1000 shares of yours and the other 500 shares is to be delivered to Mr. Durant for account of the General Motors Corporation.

It is understood that the Preferred Stock situation will be allowed to stand for the moment or until Mr. Wyllys talks further with Mr. Durant on this subject, but I think there will be no trouble whatever in taking care of it through Mr. Wyllys.

Yours very truly,

R. R. M. Carpenter,

Vice President."

Mr. Carpenter further advises that it was thought unnecessary to make any contract covering this purchase as it was

—3—

simply a stock transaction with no other conditions.

This for your information.

Respectfully Submitted,
W. S. Carpenter, Jr.

DIRECTOR, DEVELOPMENT DEPARTMENT.

Defendant's Exhibit (DP) No. 219

6120

April 9, 1923.

L. DU PONT, VICE-PRESIDENT.

Referring to attached, took the matter up with Mr. Sohlinger and he advised as follows:

That to the best of his knowledge and belief they are not now playing (as they indicate) with Flint enamel. Sometime ago samples were submitted and they made tests with same along the lines they do with similar materials, but Mr. Sohlinger has not been advised that the material proved out unsatisfactory. As to Flint having made several changes, this is not correct. They must have gotten this proposition mixed with some other one. You will note they state:—

> "To date they have not been able to give us enamel which when applied looks as brilliant and as satisfactory as the enamel we have been using."

Mr. Sohlinger says they do not give the Flint Company a chance to compete for their enamel business; therefore, their statements are confusing. The Flint Company can make an enamel that is satisfactory in allparticulars to the one the Cadillac Company are now using.

They further state that they are working together, hoping in the near future Flint will be able to give a product which will be satisfactory. Mr. Sohlinger regrets to advise that no cooperative work has been done along these lines as indicated.

He will promptly call on Mr. Widman, whom he knows very well, and get this matter straightened out.

The next time Mr. Sohlinger sees you, he will explain more fully the enamel proposition with the Cadillac Company.

Thanks for your kind interest in the matter.

H G

H. GRUBB, GENERAL MANAGER.

NOTE: "Received Apr 10 1923 Lammot du Pont" is stamped at top of page and "Return to Executive Committee Room 9069" is stamped in left margin. "X-1100" is written at top and "GMC 1586" is written at bottom of page. Italics indicate handwriting.

Defendant's Exhibit (DP) No. 220

6122

2

May 7, 1923.

MR. HUNTER GRUBB, GENERAL MANAGER:

I return herewith Mr. Sohlinger's letter to you of April 23d, enclosing list of the General Motors Divisions using Flint products.

I note that Buick Motor Company, Flint; Oakland Motor Company, Pontiac; Oldsmotor Works, Lansing and Cadillac Company, Detroit, do not use our finishing varnish, and apparently the other divisions have no use for a finishing varnish. It thus appears that we are not selling any finishing varnish to any GMC unit. There must be a reason for this. Is it because our finishing varnish is not up to the standards of our competitors? I think this should be looked into carefully.

VICE-PRESIDENT.

LduP/MD

NOTE: "Return to Executive Committee Room 9069" is stamped at bottom of page. "X-1100" and "8" (with a large check mark) are written at top of page. "GMC 1590" is written at bottom of page.

Defendant's Exhibit (DP) No. 221

6123

Flint Varnish and Color Works

NET INCOME, BY YEARS

Years 1916 - 1924, Inclusive

Year	Flint	Chicago	Total
1916	$397 796	$	$397 796
1917	276 686		276 686
1918	151 797		151 797
1919	56 849*		56 849
1920	(65 289)	(249 219)**	(314 508)
1921	(7 295)	(416 261)	(423 556)
1922	435 127	(85 945)	349 181
1923	444 691	53 734	498 425
1924 (10 Mos.)***	196 497	7 825	204 322

( ) Denotes loss.

* In 1919 du Pont received a net amount of $133,631.62 under an operating agreement which was in effect for only that year.

** Beginning May 21, 1920.

*** Dissolved October 31, 1924.

E. I. du Pont de Nemours and Company
Treasurer's Department
April 1953

3927

E

Defendant's Exhibit (DP) No. 222

6124

DU PONT SALES OF FINISHES TO FISHER BODY
AND
FISHER BODY PRODUCTION
YEARS 1924-1927

FINISHES	Quarters	1924	1925	1926	1927
	1	$ 89 388	$ 362 043	$ 411 483	$ 599 070
	2	16 275	421 736	507 668	562 360
	3	200 698	663 865	783 498	504 614
	4	332 212	521 838	294 896	457 270
Total		$638 573	$1 969 482	$1 997 545	$2 123 314
Percentage Increase Over Previous Year			208.42%	1.42%	6.30%
AUTO BODIES PRODUCED BY FISHER (in units)		347,902	692,334	1,017,260	1,240,825
Percentage Increase Over Previous Year			99%	46.93%	21.97%

Source:

Finish Sales:
Treasurer's Department
E. I. du Pont de Nemours & Co.

Fisher Body Corporation
General Motors Corporation

April, 1953.

3929

Defendant's Exhibit (DP) No. 223

COPY

6125

GENERAL MOTORS CORPORATION

Detroit, Michigan

July 25, 1928.

E. I. duPont de Nemours & Co.,
Wilmington, Delaware.

Gentlemen:

Attention of Mr. W. Richter

We have your letter of July 10th together with check in amount of $200,136.79, which represents the discount earned on the total purchases made by all Divisions from July 1, 1927 to June 30, 1928.

We note that you prepared the volume of purchases within a few days after the termination of the contract and we are wondering if you are in a position to let us have the information at the end of each month. We have several contracts of this character and at the end of every month we make a quantity discount performance schedule which is sent to all Divisions. This keeps them pretty well informed as to just how the contract is working. If you could furnish us this data monthly, but on account of its confidential nature you would not wish to have it shown on this schedule, - we would be in a position at all times to advise our major Divisions just what the total volume of purchases is up to date, which would naturally have a great deal of bearing on the future purchases. We would be interested to have an expression from you in this connection at your convenience.

Very truly yours,

GENERAL PURCHASING COMMITTEE
Purchase Contract Investigations Section
A. J. Campau, Director

By - Charles Blake

CB:EW

3929

Defendant's Exhibit (DP) No. 224

6126

EXCERPT FROM MINUTES OF
STANDING SUB-COMMITTEE
GENERAL PURCHASING COMMITTEE

40th Meeting Held at Detroit, Michigan
On Tuesday, June 28, 1927.
At 10:00 A. M.

• • •

2. General Contracts Authorized.

(a) Duco Thinner.

No contract is authorized with United States Industrial Alcohol Company as they quoted prices materially in advance of those prevailing under Contract Brief #453.

duPont Company quoted prices, effective August 1st, on No. 3601 and 3614 thinner slightly in advance of those prevailing under Contract Brief #433, which expires January 31, 1928, provision being made in the contract for advance of prices on one month's notice.

It was agreed that if the duPont Company eliminate the provision for change in prices in 30 days notice we would agree to an amendment to the contract providing for our placing 60% of our total requirements of thinner with them.

Agreed to supplement contract by adding prices on thinner formulae Nos. 3633, 3634 and 3636. The advance in price on Nos. 3601 and 3614 are accepted because the advance in price of Ethyl Alcohol justifies these increases.

E

3930

Defendant's Exhibit (DP) No. 225



E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON, DELAWARE

6127

PAINT DEPARTMENT

November 7, 1922.

Mr. J. L. Pratt, General Manager
Accessory Divisions,
General Motors Corporation,
224 West 57th Street,
New York, N. Y.

Dear Mr. Pratt:-

Instead of replying directly to your letter of November 1st, I have had our Railway & Industrial Sales Manager answer your letter and am forwarding to you the original. I think his offer in the fourth paragraph gives you an answer to all your questions. If you will indicate on whom our representatives should call, will you please write directly to Mr. Sheppard, Sales Manager of the Railway & Industrial Division. He is located at 3500 Grays Ferry Road, Philadelphia.

Thanking you for your attention in the matter, I am

Yours very truly,

F. S. MacGregor

fsm m

3931

Defendant's Exhibit (DP) No. 226

E. I. DU PONT DE NEMOURS & COMPANY
35TH & GRAYS FERRY ROAD
PHILADELPHIA, PA
SALES DIVISION

6128

November 6, 1922

Mr. F. S. MacGregor

HYATT ROLLER BEARING COMPANY

We return herewith Mr. J. L. Pratt's letter of November 1st. There are several comments I would like to make, but these I will forego until sometime when I can discuss same personally.

As far as DuPont paint being satisfactory and one which we can consistently recommend, please be advised that if several of us who have a following with the trade, did not feel it was right, you can bank on it not being recommended.

We have had enough experience to know the reason for some of the complaints that originated at Wawaset, in fact from Wilmington as a whole. When you consider the increase we have made this year, the number of new dealers, new agen' and new jobbers, we have landed and who are ordering repeated', this should convince Mr. Pratt without a question, that our products are right.

We particularly want to interest Mr. Pratt in Dulite. Last week I talked with a contractor in New York City who are purchasing at least $35000.00 worth of paint materials in the course of a year. I sold him quite a little of Dulite and he has told me it was without a question, the best mill white finish he had ever used; that Rice's could not compare with it in any way. I am attaching herewith copy of letter which was received a few days back from the Philadelphia Paper Mfg Co. If Mr. Pratt wishes to conduct investigation, I will be glad to give him names of the industrial accounts we are selling and let him convince himself that DuPont paint and varnish products are right and that our prices and service will not only equal any other competitor, but will excel a great many.

If there is anything further I can do, will be very glad to hear from you.

R. H. SHEPPARD, SALES MANAGER
RWY & INDUSTRIAL SALES DIV

RHS/o

3922

Defendant's Exhibit (DP) No. 227

COPY

6129

PHILADELPHIA PAPER MFG COMPANY
Office & Mills

MANAYUNK, PHILADELPHIA, Pa.

June 30th, 1922.

E. I. DuPont de Nemours & Co.,
35th & Grays Ferry Road
Philadelphia, Penna.

Attention of Mr. R. H. Sheppard

Gentlemen:

"We beg to state that the Antoxide Paint, which we used in our machine and beater rooms will last for a period of at least five years, judging from the way they are holding out the first year.

We find this paint applies very smoothly and the shades so far have maintained their original colors, notwithstanding the conditions in our mill.

We compliment ourselves on the excellent decision we made, when we placed our order with you for these paints."

Respectfully,

PHILADELPHIA PAPER MFG COMPANY

(Signed) B. Buchler

3933

Note:

See first exposure next card for page 6130.

Defendant's Exhibit (DP) No. 229

EXCERPTS

6131

EXPERIMENTAL STATION,
E. I. DUPONT DENEMOURS POWDER COMPANY,
MAY 1st, 1912.

D I A G R A M O F O R G A N I Z A T I O N.

D I R E C T O R

Fin Sparre.

C H E M I C A L D I V I S I O N

Murrill, Paul I.

Pyroxylin Solvents and Artificial Leather.

Masland, W. E.- In Charge.

Metheson, H. W. - Chemist.

Stimpson, E. F. - Chemist.

Hamilton, A. F. - Laboratory Boy.

3935

E

EXCERPT

Wilmington, Del., June 28th, 1913.

Executive Commitee,
E. I. du Pont de Nemours Powder Co.

Gentlemen—

I beg to submit the following report covering operations of the Sales Department for the month of May 1913.

• • •

Fabrikoids:—Sales of Fabrikoid for the month of May amounted to $118,760.34 as against 99,074.19 in May 1912 and $51,775.36 in the same month 1911. This business generally falls off during the summer season, but the prospects indicate that our increase over last year will continue to be considerable. Both the Hupp and Metz automobile people have been using our Heavy Goods for upholstering for six months past, and other large automobile manufacturers are considering doing so.

• • •

Respectfully submitted,

CHAS. L. PATTERSON,
Vice President.

EXCERPT

Wilmington, Del., August 2nd, 1913.

Executive Committee,
E. I. du Pont de Nemours Powder Co.

Gentlemen—

I beg to submit the following report covering operations of the Sales Department for the month of June 1913.

• • •

Fabrikoid sales in June amounted to $120,574 as compared with $79,914 in June 1912 and $57,644 in June 1911. There has been some falling off in the sale of light goods, which we believe is due principally to the season. Heavy qualities are holding up well, and sales of combined goods are ahead of last year. Our total business for the six months 1913 is larger than the total business done during the entire year 1911.

The Ford Automobile people have indicated their intention of adopting artificial leather for their cars, if the trials work out satisfactorily, and we have on hand orders at the present time, and hope to get standing orders for a large part of their business in the near future.

• • •

Respectfully submitted,

Chas. L. Patterson
VICE PRESIDENT.

Defendant's Exhibit (DP) No. 232 6134

Excerpt from Report of Sales Department to Executive Committee for November, 1913, dated January 2, 1914.

"Business on light weight goods has fallen off to some extent, due almost entirely we feel to a general tendency to 'hold off'. Heavy goods business shows a very large increase due to the adoption of our goods by the automobile manufacturers for upholstering. We feel that we can count on gratifying sales of heavy goods for some months to come."

3928

Defendant's Exhibit (DP) No. 228

E. I. DU PONT DE NEMOURS AND CO.

Fabrics & Finishes Department

Fabrics Division
Central Offices, New York City
Manager - W. A. Mattlage
Asst. Manager - M. N. Nickowitz

Finishes Division

9 Other Manufacturing Departments

Newburgh Plant
Newburgh, N. Y.

Fabrikoid - Pyroxylin Coated Fabrics
- Automobile trim, bindings and welts
- Belts
- Bindings and Welts
- Bookbinding
- Brief Cases
- Card Table Covers
- Case Coverings
- Draw Sheets for newspaper printing presses
- Footwear quarterlining, sock lining, upper materials and platform wrappers
- Furniture Upholstery
- Hassocks and Floor Pillows
- Hat Sweats
- Luggage coverings, linings and trim
- Millinery and costume trimmings
- Motion Picture Screens
- Novelties (change purses, powder puff containers, card cases, comb cases, etc.)
- Paper Machine Aprons
- Railroad car and vestibule curtains
- School Bags
- Slippers
- Sporting Goods
- Table Mats and Pads
- Tire Liners

PX Cloth - Pyroxylin impregnated cloth
- Bookbindings

Tontine - Pyroxylin impregnated cloth
- Washable window shades

Fre-Doped Fabrics - Pyroxylin coated and impregnated fabrics and tapes
- Coverings for control surfaces (rudders, ailerons, etc.,) on aircraft

Fabrilite - Vinyl plastic coated fabrics
- Automotive upholstery and trim, bindings, welts and seat covers
- Baby carriage upholstery and tops
- Belts
- Bicycle Saddles
- Bindings and welts
- Case coverings
- Folding Door and Partition Enclosures
- Footwear quarterlining, sock lining, upper stock and platform wrappers
- Furniture Upholstery
- Handbags and Pocketbooks
- Hassocks
- Hospital Sheeting
- Looseleaf book binders
- Luggage coverings, linings and trim
- Motion Picture Screens
- Novelties (change purses, powder puff containers, card cases, comb cases, etc.)
- School Bags
- Surgical Tape
- Table Pads
- Tablecloths and shelf coverings

Fabrilite - Vinyl plastic coated fabrics without f
- Footwear Gun cases Handbags Looseleaf Novelties powder puff Card cas etc.)

Teflon Coated Fabrics Polytetrafluoroethylene coated glass fabrics and tapes
- Electrical insulation
- Diaphragms
- Gaskets
- Press Pad Covers
- Bakery and candy manufacturing conveyor belts

Defendant's Exhibit (DP) No. 228

E. I. DU PONT DE NEMOURS AND CO.

Fabrics & Finishes Department

Fabrics Division
Central Offices, New York City
Manager - W. A. Mattlage
Asst. Manager - M. N. Nickowitz

Finishes Division

9 Other Manufacturing Departments

Fairfield Plant
Fairfield, Conn.

Fabrilite - Vinyl plastic sheeting without fabric backing.
- Footwear upper stock
- Gun cases
- Handbags and Pocketbooks
- Looseleaf book binders
- Novelties (change purses, powder puff containers, card cases, comb cases, etc.)

Rubberized Fabrics
- Hospital sheeting
- Explosive powder bags
- Replacement auto decking
- Tobacco cover cloth
- Work clothing

Fairprene Synthetic Rubber Coated Fabrics -
- Diaphragms
- Gaskets
- Washers
- Packings
- Shock and insulating pads
- Seam sealants
- Curing bags
- Blankets for molded plywood
- Hospital sheeting

Fairprene Synthetic Rubber Sheet Stock (without fabric backing)
- Diaphragms
- Gaskets
- Washers
- Packings
- Shock and insulating pads
- Seam sealants
- Curings bags
- Blankets for molded plywood

Fairprene Industrial Cements - Synthetic rubber cements
- Cements for synthetic rubbers, cured and uncured rubber, leather, fabrics, paper, metal, wood, glass and porcelain

Rug Anchor Combination natural and synthetic sponge rubber sheeting
- Non-slip rug underlay

Fairprene P.V.C. Tape (Protective and Waterstop) Neoprene Coated Fabric
- Metal seam sealant to take up unevenness and prevent corrosive galvanic action.

Teal Double layers of fabric combined with waterproof synthetic rubber cement
- Convertible automobile tops.

Ventube Rubberized Flexible Tubing
- Ventilating ducts in mines, tunnels, underground construction, shipyards and for cleaning tanks, manholes and boilers.

Defendant's Exhibit (DP) No. 233

6135

Excerpt from Report of Sales Department to Executive Committee, dated January 26, 1914

"We are supplying Ford Co. with approximately 3500 yds. Fabrikoid per day, on orders that could be cancelled in 24 hours, have no contract with them.

"Policy of Ford Co. is not to contract for supplies unless they cannot be otherwise secured. We are advised that we have about 65% of Ford's business.

"Ford expects to turn out at least 250,000 cars this year and we understand Fabrikoid is entirely satisfactory, and they have no intention of making any change.

"Under our present arrangement for grey goods for the automobile trade, the maximum we could be compelled to take is about 300,000 yds. before our contract could be terminated, while the minimum is about one-half of that.

"Ford could not well change from Artificial Leather under two months, and in that time he would use about 200,000 yds."

Defendant's Exhibit (DP) No. 234

6136

EXCERPT

November 24, 1914.

Executive Committee.
From Wm. Coyne.

SALES DEPARTMENT'S REPORT FOR SEPTEMBER

• • •

DU PONT FABRIKOID COMPANY

Total Fabrikoid net sales for September were $93,127.05, as against $106,181.61 in September 1913, and $85,159.72 in September 1912. These figures represent sales after deducting all credits.

Light goods business was 2,082 yards behind last September and 189,826 yards below the to-date period.

Heavy goods show an increase of 19,186 yards for the month and 159,779 yards to date.

We have been obliged to make some changes in prices, due to competition. On September 14th we issued a new price list covering prices on some of the heavy grades and advancing sheetings 1¢ a yard. Competitors did not follow in the advance and we had to go back to former prices.

We have renewed arrangements for 1914-1915 with the Ford Motor Car Co., have also secured some good business with the Willeys-Overland Company, and have good prospects of regaining the Hupp Motor Company's trade, so that with other smaller new business prospects for heavy goods, the outlook is encouraging.

NOTE: "RETURN TO EXECUTIVE COMMITTEE ROOM 9069" is stamped at the bottom of the first page; The handwritten initials I.duP. standing for Irenee du Pont appear

3940

at the top left of the first page; a handwritten notation at the top of the first page has been scratched out and is illegible; the following legends are stamped on the first page:

"Passed by Executive Committee, Nov. 9, 1914 mtg #328"; "noted I.du.P."; Executive Committee Secy's. No. 4796".

Defendant's Exhibit (DP) No. 235

6138

EXCERPT

March 31st, 1915.

To: Executive Committee
From: Sales Department

Sales Department's Report for the month of February, 1915.

Respectfully submitted,

WM. COYNE,
Director of Sales.

* * *

DU PONT FABRIKOID COMPANY:

Total net sales for February, 1915 were $131,185.21 as compared with $126,311.02 in February, 1914 and $113,311.65 in February, 1913.

Light goods business shows considerable improvement over the past few months, orders during February, with exception of sheetings, being approximately 50% in excess of February last year. We have asked the Operating Department to perfect a cheaper grade of sheeting than 1100 quality, if possible, to enable us to meet competition both in quality and price.

Heavy goods trade, also, shows material improvement, and we look for continued increased demand. We have closed contract with the Willys-Overland Company, which will aggregate 300,000 yds. artificial leather and approximately 1,000,000 yds. of mohair per annum.

NOTE: The first page bears the following stamped legend "Noted I.duP.", "Executive Committee, Secy's No. 5258"; "Passed by Executive Committee, Apr. 12/1915 mtg. #364"; "RETURN TO EXECUTIVE COMMITTEE ROOM 9069".

E

EXCERPT

April 30th, 1915.

Executive Committee,
From Sales Department.

Sales Department's report for the month of March, 1915.

Respectfully submitted,

Wm. Coyne,
Director of Sales

* * *

DU PONT FABRIKOID COMPANY.

Total net sales for March, 1915, were $248,214.67 as compared with $176,685.83 in March, 1914, and $134,283.19 in in March, 1913.

Light goods business, while showing a gradual improvement, is not yet up to what we consider satisfactory.

Heavy goods business shows a gratifying increase due principally to the suddenly increased demand from the automobile trade. Outlook for these lines very promising, and with return of normal business we expect to show steadily increasing sales.

On Combined goods we are making good progress, due mainly to the large contract with the Willys-Overland Company for all their top materials for the years 1915 and 1916.

NOTE: The handwritten initials "I.duP." appear in the upper left of the first page; some illegible handwritten initials appear in the upper right of the first page; the first page also bears the following stamped legend: "Passed by Executive Committee May 10, 1915 Mtg. #372"; "Executive Committee Secy's No. 5330"; "RETURN TO EXECUTIVE COMMITTE ROOM 9069."

E

Defendant's Exhibit (DP) No. 237

6140

EXCERPTS FROM A LIST OF ACCOUNTS RECEIVABLE OF THE E. I. DU PONT DE NEMOURS POWDER COMPANY, SCHEDULE OF FABRIKOID AGENCY, DATED JULY 31, 1913

LIST A

Customers' Business Identified. (Items $100 and over)

Customer	Type of Business	Accounts Receivable July 31, 1913
American Auto Trimming Co.	Manufacturer - Auto Tops	$ 1,956.33
American Auto Top Mfg. Co.	Manufacturer - Auto Tops	117.90
American Motor Co.	Manufacturer - Automobiles	5,992.92
Atlantic Auto Top & Trimming Co.	Auto Trim Shop	198.87
Autocape Top Co.	Auto Trim Shop	250.98
The Bartholomew Co.	Manufacturer - Automobiles	1,764.76
The Briggs Mfg. Co.	Manufacturer - Auto Bodies & Tops	10,524.01
Buford Bros. Hardware Co.	Jobber - Auto & Carriage Top Material	146.25
Cadillac Motor Car Co.	Manufacturer - Automobiles	9,223.67
D. L. Carpenter & Co.	Jobber - Auto Supplies	119.48
Geo. R. Carter Co.	Manufacturer - Bindings and Belts for Autos	225.63
The Colby Motor Co.	Manufacturer - Automobiles	230.37
Cole Motor Car Co.	Manufacturer - Automobiles	62.37
Cruse & Crawford Mfg. Co.	Jobber - Automobile Material	110.42
Geo. W. Davis Carriage Co.	Manufacturer - Carriages & Automobiles	425.03
Drummond Motor Co.	Manufacturer - Automobiles	379.52
Louis Dusenbury & Co.	Jobber - Carriage & Auto Supplies	324.17
Ford Motor Co.	Manufacturer - Automobiles	671.87
Jacob Gerhab	Jobber - Carriage & Auto Supplies	311.36
Glover Equipment Co.	Jobber - Automotive Material	143.32
C. M. Hoof & Co.	Jobber - Auto & Carriage Supplies	1,278.29
Hupp Motor Car Co.	Manufacturer - Automobiles	652.58
Interstate Auto Co.	Manufacturer - Automobiles	124.7[illegible]
Landers Bros. Co.	Jobber - Auto Trade	551.4[illegible]
Marathon Motor Wks.	Manufacturer - Automobiles	263.55
The Metz Co.	Manufacturer - Automobiles	13,690.84
Moore Hardware & Iron Co.	Jobber - Carriage & Auto Material	158.83
McDonald Bros.	Jobber - Carriage & Auto Supplies	239.09
P. W. Norris & Sons	Jobber - Carriage & Auto Supplies	252.91
The Oakland Motor Car Co.	Manufacturer - Automobiles	6,116.92
Olds Motor Works	Manufacturer - Automobiles	589.85
Geo. L. Paetz	Jobber - Carriage & Auto Supplies	209.66
Sligo Iron Store Co.	Jobber - Carriage & Auto Supplies	775.91
H. D. Taylor & Co.	Jobber - Carriage & Auto Supplies	572.86
Geo. Tiel & Co.	Jobber - Upholstery & Auto Supplies	348.65
Total		$ 59,005.32

LIST B

Company Name Suggests That Customer Was in Automotive Industry

Customer	Accounts Receivable July 31, 1913
American Metal Wheel & Auto Co.	$ 779.16
Auburn Auto Top Co.	18.23
Austin Auto Co.	99.88
Auto & Carriage Top Co.	95.40
Auto Leather Goods Co.	48.69
Berg Auto Trunk Specialty Co.	12.19
Bowling Green Motor Car Co.	19.13
Century Auto Top & Supply Co.	94.80
Commercial Auto Body & Mfg. Co.	171.02
Crow Motor Car Co.	96.89
The Croxton Motor Car Co.	99.20
D. K. Auto Specialty Co.	136.85
Duquesne Auto Top Co.	48.90
Dustin Auto Top & Slip Lining Co.	403.31
Elyria Auto Top & Repair Shop	12.52
Empire Auto Top Co.	65.81
Fort Dodge Auto Top Co.	191.70
C. G. Gardner, Trustee, Knox Auto Co.	31.05
Hutchinson Auto Top Factory	103.18
Hyatt Auto Top Co.	38.63
The Ideal Auto Co.	76.13
Klaus Auto & Vehicle Works	38.59
Kline Motor Car Corp.	655.88
Knight Carriage & Auto Co.	53.75
Kreidler Auto Top Co.	1.22
Lackawanna Auto Co.	99.51
Miami Garage & Machine Co.	(10.00)
Missouri Auto Top & Supply Co.	27.06
Monarch Motor Truck Co.	11.25
Motor Car Mfg. Co.	2,386.35
Meyers Auto Top Co.	(.42)
McFarlan Motor Car Co.	14.06
National Auto Top Co.	49.29
N. J. Auto Top Mfg. Co.	48.90
Niagara Auto Cover Co.	135.88
Ohio Auto Carriage Co.	98.71
P. M. Auto Carriage Co.	236.06
Poertner Motor Car Co.	28.53
Receivers, Knox Automobile Co.	(63.00)
Geo. S. Robb Auto Top Co.	32.73
St. Louis Top Co.	81.53
Shirley Auto Fabric Co.	185.19
The Simon Auto Top Mfg. Co.	169.41
Sioux City Auto Top Co.	99.18
Springfield Metal Body Co.	103.76
Standard Top Co.	50.53
Standard Auto Top Co.	(.15)
Standard Top & Equipment Co.	68.45
Trumbly Auto Top & Equipment Co.	47.98
The Union Top Mfg. Co.	61.75
Vehicle Supply Co.	29.91
Vehicle Top & Supply Co.	228.89
Vetter Auto Top Co.	30.76
Western Auto Sales Mfg. Co.	153.34
Western Auto Top Co.	87.74
Williams Top Co.	45.48
Wisconsin Auto Top Co.	627.63
Total	$ 8,558.40

6142

SUMMARY

	Accounts Receivable		July 31, 1913	
	Number of Customers	%	Amount	%
List A	35	4.27	$ 59,005.32	28.23
List B	58	7.07	8,558.40	4.09
Identified As Being In Automobile Industry	93	11.34	$ 67,563.72	32.32
Not In Automobile Industry or Unidentified	727	88.66	141,483.96	67.68
Totals	820	100.00	$ 209,047.68	100.00

3945

Defendant's Exhibit (DP) No. 238

Wilmington, Delaware..

July 30, 1916.

6143

THE BOARD OF DIRECTORS,

DU PONT FABRIKOID COMPANY.

Gentlemen:

I enclose, herewith, Operating Department Report for the month of May, 1916, which has been prepared for me by Mr. Frederick Kniffen, Director of Operations.

Respectfully submitted,

Vice-President.

RAP--W.

FABRIKOID - NEWBURGH

The conditions noted in previous months have continued, the output showing further increases. Expressed in standard units, the following figures are of importance:

Average daily orders for 1914	7,600
" " " " January to June 1915	15,200
" " " " July to December 1915	24,800
" " " " January 1916	37,500
" " " " February 1916	55,800
" " " " March 1916	62,300
" " " " April 1916	30,900
" " " " May 1916	23,000
" " " " June 1916	43,000
Factory production May 1916	41,000
" " June 1916	51,500
Factory capacity January 1,1916	20,000
" " June 1, 1916	50,000
" " July 10, 1916	60,000

Analysis of the orders received sheds some light upon the contract shown between the 23,000 received in May and the 43,000 received in June. The difference is due to three large automobile companies having placed in June orders for delivery from July to December. The orders from other sources averaged 16,600 per day. The average daily requirements estimated by the Sales Department for the four large automobile customers whom we are serving regularly (Overland, Ford, Chevrolet and Buick) are 16,200 units; making a total of 32,800 units per day representing the present rate of receipt of orders.

The #3 Process is working upon a small scale with every expectation of increasing in volume.

Orders on our books at the first of June for June shipment were 1,803,487 units. At the first of July for July shipment 1,125,000.

While this is a May report, I have given June figures in some cases as the matter of plant capacity and condition of orders is of supreme importance and the June data is now available.

Costs show moderate increases above the year to date but these increases are not equal to the corresponding increases in cost of materials.

FABRIKOID - TORONTO

Our first coating machine explosion in the history of the plant occurred in May. Damage was slight and as we were operating with one machine in reserve, output was not materially affected. Otherwise, Plant's operations were normal. May cost figures are valueless because of a large adjustment upon the price of jelly.

3947

Defendant's Exhibit (DP) No. 239

Du Pont Magazine - February 1916
Vol. 6, No. 2 - Inside back cover

What Standardization Means to Automobile Buyers

IT means VALUE—the utmost in efficiency per dollar of cost. Just to the extent that a car is standardized does the buyer's dollar approach the maximum of purchasing power

Standardization means definite, proved quality; known manufacturing costs and reduced selling costs.

Of the million autos that will be sold in 1916, 75% will be standardized cars selling for less than $1000.00 each. This remarkable American achievement is the result of standardizing motors, starters, carburetors, speedometers, ignition and lighting systems, trans-

Defendant's Exhibit (DP) No. 240

6146

CC: E. J. BRAUN
R. J. DUNN
H. D. MC LEAN
R. D. HANCOCK

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
FABRICS & FINISHES DEPARTMENT

New York Office
July 8, 1947

126

JUL 9-1947
J. G. H.

A. I. BROWN
NEWBURGH

GENERAL MOTOR TRUCK

When I recently called on American Seating Company they advised that the were still using Koroseal for bus seat upholstery on instructions from General Motors Truck. Further, they were not interested in evaluating "Cavalon" 7561 unless requested by their customer. Mr. Hugh Bersie of American Seating is the GM Truck contact man and although G. M. Truck had given him a sample of #7561, he was apparently not asked to consider our material.

Can you give me the status of our sales efforts with G.M. Truck on both "Cavalon" 7561 and "Fabrilite" 6036?

JRO/bjk

JRO
J. R. OWENS

RECEIVED
JUL 10 1947
A. I. B.

3949



Defendant's Exhibit (DP) No. 241

6147

CC: J. W. COSTELLO - F ...FIELD

Newburgh, New York
December 26, 1947

T. A. ...LLE

GENERAL MOTORS TRUCK

In a recent conversation with Stewart Hayes, who represents us in railway and the street bus field, he gave me the distinct impression that General Motors Truck is continuing to promote Koroseal for bus upholstery where the customer is interested in a substitute for natural leather. Mr. Hayes seemed to feel that it is their practice to submit a sample of leather and of Koroseal material with a price differential in favor of Koroseal. He may not have the facts straight but I am passing it along to you for what it is worth with the hope that G.M. Truck and Coach may be willing to consider our 7150 material or "Fabrilite" 6036 for this.

ALB/rmp

A. L. BROWN

NOTE: "File Copy" appears diagonally across the letter.

3950

Defendant's Exhibit (DP) No. 242

FORM 11000

CC - E. S. Nickerson - New York
G. A. Staples

E. I. DU PONT DE NEMOURS & COMPANY
(INCORPORATED)

FABRIKOID DIVISION
NEWBURGH, NEW YORK, U. S. A.
CABLE ADDRESS "FABRIKOID, NEWBURGH, N. Y."

6148

Detroit, Michigan
August 5, 1940

MR. E. DOREMUS
NEWBURGH

FISHER BODY

Newburgh certainly did a fine piece of work in getting out all of the material scheduled for Fisher last week, some of it was in very short notice and some involving schedules which were advanced unexpectedly.

This is extremely good service and is greatly appreciated by the Fisher people who are responsible for getting the stocks on hand to take care of production, which for some of the divisions was moved ahead in advance of the original planned starting date.

TAN:T

T. A. MALLE

read & noted
8/9/40

2951

Defendant's Exhibit (DP) No. 243

6149

May 15, 1918.

Copy to Mr. J. A. Haskell,
General Motors Bldg.,
1764 Broadway, New York.

OUR FILE FO—Chevrolet Motor Co.----FK

Mr. Hohensee, of the Chevrolet Company, recently advised that reports from his salesmen and an examination of a few cars by him personally in St. Louis had given him the impression that the Fabrikoid used by Chevrolet was not giving satisfaction and that it was not wearing so well as the artificial leather used upon competitive cars, principally Ford. Coming from Mr. Hohensee himself the matter demanded careful investigation and the writer suggested to Mr. Hohensee the propriety of a joint inspection upon the condition of the artificial leather upholstery of a large number of cars in actual service, by representatives (who should be experts in their lines) from both the Chevrolet and Fabrikoid companies, several brands of cars being examined.

This investigation has now been completed so far as New York City is concerned, and separate reports have been prepared by the two investigators.

In general, both agree that the wearing qualities of the Chevrolet upholstery have been certainly not inferior to those of the other cars examined (Maxwell, Ford, and Overland) and in appearance, as to prominence and uniformity of embossing, Chevrolet was somewhat ahead of the others. For several years Chevrolet has used no leather substitute for upholstery, other than Fabrikoid.

3952

The following observations by Mr. Stewart of the Chevrolet Company, who represented that company in the investigation are pertinent:

Extract from Mr. Stewart's report to Mr. Hohensee—

> "In comparing the uniformity of grain impression, imitating genuine leather, of the various Chevrolet cars inspected, will say that our cars show up at least 75% better than any of the other makes of cars which we inspected. However this might possibly be due to the fact that Maxwell, Ford, and Overland are buying material from two or three different sources and for this reason are unable to match their materials."

Extract from Mr. Stewart's letter to Mr. Bristol, the DuPont Fabrikoid Company representative—

> "Believe I have covered every point in my memorandum, of importance, and sincerely trust, with the report which you will turn in to officials of your company together with the report that I am giving Mr. Hohensee, that we will be able to satisfy them while we found conditions generally speaking in comparison with other makes of cars exceptionally good for Chevrolet."

The report of the Fabrikoid representative, Mr. Bristol, (who was one of the plant Superintendents when the complained of goods were made) covered the same points in general.

At our conference with Mr. Hohensee in reference to this complaint, where some of the upholstery under com-

plaint was exhibited, I received the general impression that while in some places the material had worn off to a greater extent than normal, the behavior as a whole had been similar to that of artificial leather used generally for automobile upholstery purposes. Instead of attempting to convince Mr. Hohensee ofthis, however, I thought it wiser to allow him to receive that impression as the result of investigation by men in his own organization.

Incidentally it may be mentioned that while we believe the Fabrikoid furnished Chevrolet during the period when

the complained of material was made (which was more than a year ago) to be fully up to the product of any competitor, we have since introduced improvements in manufacturing methods which should materially cut down the tendency for the coating to wear off, and are at the present time working on still additional improvements.

F. KNIFFEN.

FK/IRB

MR. C. L. PETZE: --

We are enclosing herewith copies of Mr. Stewart's report, his letter of May 3rd to Mr. Bristol, and Mr. Bristol's reply thereto of May 9th; we are not enclosing copy of Mr. Bristol's report as this was forwarded to you with our letter of May 10th, file FO-40--GTB. These were too voluminous to be of interest to the other recipients of this letter.

F. KNIFFEN.

FK/IRB

NOTE. On page 1 at top there is pencil check-mark after "Copy to Mr. J. A. Haskell" and "Messers P. S. du-Pont, Wm. Coyne, R. R. M. Carpenter, H. F. Brown and C. L. Petze" has been lined out.

1916, 75% will be standardized cars selling for less than $1000.00 each. This remarkable American achievement is the result of standardizing motors, starters, carburetors, speedometers, ignition and lighting systems, transmissions, differentials, tires, wheels, axles, rims, bearings, etc.

Finally the upholstery has been standardized by the almost universal adoption of

DU PONT FABRIKOID

MOTOR QUALITY

40% of all 1915 cars sold were upholstered in this proved, guaranteed material, and in 1916 the total will be nearly 60%.

Fabrikoid is the only standardized automobile upholstery. It wears better than coated splits (commonly sold as "genuine leather") and has the artistic appearance and luxurious comfort of the best leather.

To get the most for your money, buy a standardized car.

DU PONT FABRIKOID COMPANY
WILMINGTON, DEL.

Factory, Newburgh, New York
Canadian Factory and Office, Toronto

Rayntite Fabrikoid

top material, single or double texture, is guaranteed one year against leaking, but built to last the life of the car.

Craftsman Fabrikoid,

the artistic and durable upholstery material for furniture and home decoration is sold by the yard in leading department stores.



3948

Defendant's Exhibit (DP) No. 244

6152

Excerpt from Report of Du Pont Fabrikoid Company to C. W. Phellis, General Director of Sales, for the month of November, 1919, dated January 2, 1920.

"Our capacity at Fairfield is sold up. We are, therefore, making no quotations, although we did accept an additional order from Chevrolet Motor Company for 150,000 yards of Double Texture Rubber at current prices."

* * * *

"Indications for the year 1920 point to very good business in all lines. Fairfield Plant is now sold to capacity until June 30th, and a great deal of business is being offered to us which we are not in a position to accept."

3955

"Sales are gradually improving. In the case of Fairfield, the Plant is working as rapidly as possible to a capacity basis, but we have given them enough orders to warrant this. The present capacity of the Plant has been sold from July 1 to the end of the year. It should be noted that while heretofore practically all of the Fairfield material sold was of a Rubber Drill for Ford Motor Company, the sales we have recently made are of the high grade top material, and while the capacity of the Plant has been sold, we have no orders from Ford Motor Company. The business on Pyroxylin material is improving, but has not yet reached large proportions. The big furniture manufacturers are stocked until June and July, and none of the automobile companies have ordered any large quantities of this type material. However, prospects look very good."

BUICK MOTOR COMPANY.

On Monday, May 6th and Saturday, May 11th, Messrs. Petze, Haon, Stark and Lindsey called on Buick and outlined what we could probably do for them as per attached report and letter to Stark May 16th completing quotations.

On June 8th at our solicitation, Stark asked Buick to favor us with an order for 25,000 yards of double texture rubber top material to enable us to get it on test, as it was a comparatively new product with us and before exploiting it generally and increasing our capacity we desired to have some actual service.

Order was placed about June 10th for 25,000 yards each 54" and 36" double and single texture, to be distributed over five equal monthly deliveries, August to December inclusive. Price quoted was $1.20 per yard for 54" and .684¢ per yard for 36".

June 12th we advised Stark, would accept Buick order double texture for delivery over July, August and September, as otherwise our object of getting these goods on test could not be accomplished.

June 12th Stark stated he tried to get Wade to release during July when order was booked, but he refused.

June 13th we wired Stark, would take specifications from Buick for July and August deliveries of anything they wanted to place for double texture rubber up to 25,000 yards.

June 13th Stark wired, Buick still undecided; remaining items open on list but might reach decision next

day, and asked whether we would not accept Buick double texture specifications for deliveries specified—to December.

June 14th, we wired Stark didn't care to go beyond August, and that we were not in position to guarantee the same proposition made Mr. Wade, because Buick's delay had forced us to give Chevrolet first chance, they having come into the market and requested us to protect them, and that the whole matter would now require new negotiations, which would be discussed during the week of Convention —June 17th-23rd.

About this time Mr. Cromling succeeded Mr. Wade as Purchasing Agent, and asked Mr. Stark for a full report of what we had agreed to do through Mr. Wade, as he could not find any record of same. This information was given Mr. Cromling June 25th.

June 25th Stark wired, awaiting information how much Fairfield double and single could supply Buick, pending information from Chevrolet.

June 27th, wired Stark that Chevrolet had closed for all available top and curtain rubber material, and we had nothing in sight at present for Buick, but that we would

accept 21,600 yards of 4000 quality combined to 700 sheeting per arrangement with Wade, provided it was accepted by close of business Saturday. (Buick had sent us a contract for 53,000 yards of this material which they wanted to take up to July 1, 1919. We were not in position to offer them that quantity, but decided to negotiate on 21,600 yards).

3958

June 28th, Stark asked by wire if we would hold matter open until Monday or Tuesday because of further information required.

On June 28th we also wrote Stark relative to contract forms sent us by the Buick Company, to some of the paragraphs of which we objected, preferring our own form. Letter attached.

In same letter we explained why we had been unable to give a definite response to his letter June 25th, account negotiations which had developed with Chevrolet, and why we only offered 21,600 yards of the 4000 combined to 700.

June 29th, wired Stark that further negotiations with Chevrolet made it questionable whether we could furnish Buick anything or not, and would wire fuller details Monday.

July 1st Stark wired, our letter relative contract did not advise how long period would accept 21,600 yards—we felt that our letter 28th was clear that it would be over last half of this year.

July 2nd, we wired Stark offer on 21,600 yards expired Saturday. Available grey goods were exhausted and we regretted inability supply them, but their delay in acceptance was responsible.

July 3rd, Stark notified Cromling accordingly.

July 10th, Husted (assisting Stark), wired if grey goods situation had changed so that we could accept Buick proposition of June 7th.

July 11th, wired Husted unable accept Buick proposition account no grey goods.

July 12th, Stark wrote history of negotiations and urging that we protect the Buick Co. even at this late date, which was impossible!

July 20th, Mr. Petze wrote Stark in reply to his letter 12th, giving a general resume of the reasons for our action.

July 23rd, letter from Stark enclosing one from Mr. Cromling, answering our criticisms of contract form.

July 23rd, Stark, in view of cancellation of order for Ford Motor Co. for 4000 quality, asked if this would assist us in supplying Buick with some 4000 combined to 700.

— 3 —

July 25th, wired Stark were actually short about 20,000 yards 700 quality to complete Chevrolet order.

July 25th, Stark wired to know if possible substitute off color, dyed Drill, as backing for 4000.

July 27th, wired him could furnish 4000 combined with 1.70 off color Drill at price formerly quoted and wired ~~acceptance~~ *if acccptable*

July 30th, Stark wires Buick placed order with unknown competitor and that he was writing fully.

HAL/mlm

3960

Defendant's Exhibit (DP) No. 247

6158

Excerpt from Report of Fabrikoid Division to Executive Committee for November, 1922, dated December 18, 1922.

"A visit to Martin Parry Corp. of York, Pa. reveals complete satisfaction with our goods, deliveries and service. We feel optimistic about securing their next year's business 100% which they forecast at a 50% increase over 1922 with possibilities of doubling 1922."

3961.

Defendant's Exhibit (DP) No. 248

6159

Excerpt from Report of Cellulose Products Department to Executive Committee for October, 1923, dated November 23, 1923

"The Committee is already acquainted in detail with the developments at Chevrolet, resulting in the loss of 2,000,000 yards of Fairfield rubber over the first six months of 1924, and the writing of a contract with them for an estimated 1,000,000 yards of FABRIKOID over the same period on a requirements basis."

Defendant's Exhibit (DP) No. 249 6160

July 15, 1936

W. A. WALLE - DETROIT

Dear Tom:

It is certainly fine news to note in your pen and ink memorandum that Chevrolet has selected 2200-LBC Aluminum for their winter fronts on the new models. Congratulations on this accomplishment. Last year you will recall competitive rubber was used.

I assume that you will follow Detroit Cover closely for a definite yardage contract. It is quite important that we get them under cover as quickly as possible because the gray goods market is in a very uncertain stage at present. Prices have been marked up quite a bit during the past week.

A. L. BRIAN

ALB:AJ.

NOTE: "Received Jul 16 1936 E. M. A." is stamped above date line and "Jul 16 1936 E. S. N." above body of letter.

3963

Defendant's Exhibit (DP) No. 250

E. I. DU PONT DE NEMOURS & COMPANY
DOLLAR SALES OF COATED AND COMBINED FABRICS TO THE CHEVROLET MOTOR COMPANY — 1922 TO 1935

Year	Newburgh Sales	Fairfield Sales	Total du Pont Sales	Open Cars Manufactured	Newburgh Sales Per Car Manufactured	Fairfield Sales Per Car Manufactured	Total du Pont Sales Per Car Manufactured
1922[1]	696,250	800,000[2]	1,496,250	154,067	4.52	5.19	9.71
1923	1,158,537	NA[3]	NA	266,389	4.35		
1924	444,557	220,103[4]	664,660	156,598	2.84	1.41	4.25
1925	887,635	750,185[5]	1,637,820	225,059	3.94	3.33	7.27
1926	541,094	870,157	1,411,251	153,382	3.53	5.67	9.20
1927	499,796	617,391	1,117,187	133,604	3.74	4.62	8.36
1928	538,769	709,769	1,248,538	118,682	4.54	5.98	10.52
1929	450,308	312,625[6]	762,933	81,497	5.53	3.84	9.37
1930	327,608[7]	285,238[8]	622,846	44,714	7.55	6.38	13.93
1931	265,217[7]	194,922	460,139				
1932	100,757[7]	56,374	157,131				
1933	181,438[7]	29,677	211,115				
1934	417,447[7]	63,620	481,067				
1935	324,483[7]	7,947	332,430				

[1]Sales for 1922 are from GM-T. Ex. No. 151. Du Pont has no record of sales for 1922.

[2]Approximately $37,500 placed with O'Bannon included in this figure. G. T. Ex. No. 411.

[3]Twenty-five percent of Chevrolet top business during last six months went to du Pont's competitors.

[4]All of Chevrolet's top business during the first six months went to competitors, G. T. Ex. No. 418.

[5]All top materials purchased from competitors during first five months of 1925 except for one carload purchased from du Pont. Chevrolet started buying uncoated combined decking from Haartz.

[6]Large purchases of uncoated fabrics from Haartz replaced purchases of Pontop from du Pont.

[7]Includes upholstery bought for the Chevrolet Commercial Body Division in Indianapolis.

[8]Chevrolet started using uncoated decking on all new production. Du Pont began supplying about one-half of Chevrolet's requirements of this type of fabric.

Sources: General Motors Corporation Production Records.
Du Pont Departmental Trade Records—Fabrics Division Sales Cards.

F221

3964

6161

Defendant's Exhibit (DP) No. 251

6162

Letterhead of

BUICK MOTOR COMPANY
Flint, Michigan, U. S. A.

Please Refer to File No. 370.307

July 23, 1918.

Mr. J. A. Haskell
Vice President
General Motors Corp
New York City

Dear Mr. Haskell:—

In answer to your favor of the 5th inst concerning artificial leather furnished by duPont Company, would advise that the amount of this material used by us in cars assembled in 1917 was as follows:—

	D Models	E Models	Total
50" Imitation Leather	16,188 yds	140,025 yds	256,213 yds
36" Raynitite	133,778 "	63,516 "	197,294 "
54" "	165,270 "	none	165,270 "
54" Dreadnaught	none	65,975 "	65,975 "
GRAND TOTAL			679,752 yds.

Amount used in cars January 1st to May 31st, 1918.

	E Models
50" Imitation Leather "	107,020 yds
36" Raynitite "	31,053 yds
54" Dreadnaught "	29,792 yds
GRAND TOTAL	167,865 yds.

3965

Defendants' Trial Ex. No. _____

6163

Trusting this is the information you desire, I am

Yours very truly,

/s/ W. P. CHRYSLER
General Manager

M:S

NOTE: At top are written notation "wrote 8/5" and time stamp "Received July 25 1918 J. A. Haskell". At bottom is written notation "how much mohair?" Check-mark appear to the left of each listed article.

Defendant's Exhibit (DP) No. 252

6164

COPY

July 28, 1920.

MEMO:

On the basis of 170,000 open cars production, which was the original estimate, we were originally given an order for 1,300,000 yards of deck and curtain material, and were told that this represented 2/3 of the total quantity required, which on this basis would be 1,950,000 yards.

This order was later on reduced to 780,000 yards, so that our competitor, Haartz, who received the order for the balance of the requirements, received an order for approximately 1,150,000 yds.

We are now advised that in place of a production of 170,000 open cars the production will be approximately 135,000. Therefore tht total yardage required on the reduced production would be approximately 1,500,000 yards.

We are now asked to reduce our quantity from 780,000 yards to 353,000 yards. If we deduct the 353,000 yards from the estimated new requirements of 1,500,000 yards, we have approximately 1,150,000 yards, which is the estimated actual yardage contracted for with Haartz, indicating no reduction in his contract quantities.

CLP*mlm

3967

Defendant's Exhibit (DP) No. 253

6165

Excerpt from Report of Fabrikoid Division to Executive Committee for January, 1922, dated February 15, 1922

"During this month the old uncompleted 1920 Buick contract was finally adjusted - cancelled - and a new contract written under which they will buy their entire requirements of us in 1922, at a satisfactory price."

3968

Defendant's Exhibit (DP) No. 254

Excerpt from Report of Fabrikoid Division to Executive Committee for October, 1922, dated November 17, 1922

"Some special work was carried on with Buick Motor Co. on a trunk covering for the Sport model. A small yardage of drak red, fancy embossed Fabrikoid (to match General Leathers upholstery) has been shipped to their Engineering Dept. These trunks, if exploited, will most likely be made by Buick themselves.

"They are also looking for a top material of combined fabric which is faster to light than the material they are now using, which is khaki duck combined to drill and which will run into considerable yardage for 1923."

Defendant's Exhibit (DP) No. 255

61166

Excerpt from Report of Fabrikoid Division to Executive Committee for March 1923, Dated April 23, 1923

"PROMOTION OF NEW LINES (MANUFACTURE AND/OR SALES):

"An order for 7,500 yards in the Cobra rollergrain was received from Fisher Body Company for use on Oakland work, and covers deliveries for May, June and July. When our material starts thru their plant, in production, it is hoped that the high quality will result in quantity orders.

"Negotiations are in process with General Motors units regarding the supply of khaki top materials for sport jobs. During March shipments were made to Buick of about 3,000 yards which should result in a large yardage, if this shipment is satisfactory.

"Repeat orders were received from Millspaugh & Irish and Rauch & Lang which were noted in last month's report as ordering the new 'Taxi' grain material. Checker Cab, as reported under 'New Business' is also credited to this development. At present work is in progress on Yellow Cab Company business with hope of landing it for the new grain."

Defendant's Exhibit (DP) No. 256

6167

Excerpt from Report of Fabrikoid Division to Executive Committee for May, 1923, dated July 2, 1923

"A further attempt will be made to enter the field for Sport Top material, which is 1.22 drab duck combined to 1.85 Drab Drill. While this class of business is not very profitable, competitors continue to furnish Buick with it which might influence Buick to give them more desirable business in addition to the Sport Top material.

3071

Excerpt from Report of the Fabrics Division to Executive Division for March 1929, Dated April 19, 1929

"The March increase in total sales can be attributed primarily to sales of Everbright Pontop to Fisher Body Corp. and Ford Motor Co., though there was an appreciable increase in Specialties due to the Spring demand for raincoat material. The present boom in the Copper industry contributed largely to the 100% increase in Ventube sales.

"Production. Fairfield production for the month totaled 1 250 000 stads, or 114% of the rated normal capacity as compared to 1 100 000 stads for the month of February, 1929.

"Construction Appropriations. At Fairfield one Major project was approved in the amount of $53 000 for the erection of three additional vulcanizing chambers. Three Minor appropriations were also drawn totaling $1 800.

"Savings on Construction Projects. The installation of a Railroad Siding at Fairfield, costing $38 700 and promising savings of $13 775, has been completed one year April 1st. Total savings are calculated to amount to $60 000, about $6 000 of which is gained thru reduced labor cost in handling materials and the remainder from lower purchase price of Naphtha, due to ability to purchase in tank car lots.

"Prices and Competition. Fairfield automotive prices remained unchanged during the month, but a slight increase in some of the raincoat numbers was made. We quoted Buick Motor Company on their Teal business for the last nine months of 1929 without success, the business going to the J. C. Haartz Company, as we understand it, solely because General Motors Export insisted on Haartz's material.

"Sales and Items of Special Significance. Studebaker Motor Co. have been sold our Everbright Pontop for two of their models, their initial orders being for 16 200 yards, along with a 1 000 yard order for double texture Duo-tone material. Oldsmobile have specified our Teal material for trimming open cars. Quotations are being submitted to the Chrysler Corporation on their deck material requirements (estimated at 400 000 yards) for the last half of this year. In addition to the numbers we are now supplying to Ford they have adopted our single texture Everbright Pontop 124 for Visor work, and it is believed that this business will run between 30 000 to 35 000 yards monthly, putting total probable sales for May around 200 000 yards. Murray Body Corporation, instructed by Ford Motor Company to use our material on Ford busses, have been sold an initial order for 4 600 yards of 60" Everbright Pontop"

Defendant's Exhibit (DP) No. 258

6169

EXCERPT

September 21, 1931

MR. WM. RICHTER
GENERAL MANAGER

FABRIKOID DIVISION
MONTHLY REPORT—AUGUST, 1931

• • •

Sales and Items of Special Significance. Buick has specified Fairfield teal, (double texture topping for sport models) for the remainder of 1931. This business has been regained after a lapse of two years, during which competitive material was used. The special colors, and especially woven figured backings of the samples submitted, were instrumental in our receiving this business, as competitors did not have a similar product to offer.

• • •

Defendant's Exhibit (DP) No. 259

E. I. DU PONT DE NEMOURS & COMPANY
DOLLAR SALES OF COATED AND COMBINED FABRICS
THE BUICK MOTOR COMPANY—1919 TO 1933

Year	Newburgh Sales	Fairfield Sales	Total du Pont Sales	Open Cars Manufactured	Newburgh Sales Per Car Manufactured	Fairfield Sales Per Car Manufactured	Total du Pont Sales Per Car Manufactured
1919			1,017,908[1]	112,522			9.05
1920			1,225,888	101,081			12.13
1921			142,339	67,287			2.12
1922	361,150[2]	995,000[2]	711,821	85,982	4.20[2]	11.57[2]	8.28
1923			1,208,809	124,048			9.74
1924			526,198	84,056			6.26
1925			127,122[3]	27,282			4.66
1926			126,291	20,658			6.11
1927			172,551[4]	13,869			12.44
1928	84,626	184,767	269,393	19,113	4.43	9.67	14.10
1929	71,927	38,827	110,754[5]	14,867	4.84	2.61	7.45
1930	37,067	36	37,103	4,082	9.08	.01	9.09
1931	1,540	3,284	4,824				
1932	554	1,925	2,479				
1933	0	0	0				

[1]Largely represents sales of Pontop.

[2]These figures taken from GM-T. Ex. No. 151 and include purchases of combined and uncoated fabrics from competitors of du Pont.

[3]During first 6 months of 1925 Buick placed all of its top business with other sources.

[4]Buick started buying Teal from du Pont.

[5]Du Pont lost Buick's Teal business to Haartz.

Sources: General Motors Corporation Production Records
Du Pont Accounting Records—Accounts Receivable Ledger

Defendant's Exhibit (DP) No. 260

E. I. DU PONT DE NEMOURS & COMPANY
DOLLAR SALES OF COATED AND COMBINED FABRICS TO THE CADILLAC MOTOR CAR CO. — 1921 TO 1926

Year	Newburgh Sales	Fairfield Sales	Total du Pont Sales	Open Cars Manufactured	Newburgh Sales Per Car Manufactured	Fairfield Sales Per Car Manufactured	Total du Pont Sales Per Car Manufactured
1921			43,421[1]	5,700			7.62
1922	72,657[2]	94,960[2]	153,070	8,900	8.16[2]	10.67[2]	17.20
1923			121,270	8,102			14.97
1924			26,396[3]	3,508			7.52
1925			85[4]	2,280			.04
1926			41[4]	3,062			.01

[1]Cadillac probably using stocks from inventories.

[2]From GM-T. Ex. No. 151.

[3]Imitation leather purchased from Textileather for 6 months of 1924.

[4]Open bodies manufactured by Fisher.

Sources: General Motors Corporation Production Records.
Du Pont Accounting Records—Accounts Receivable Ledger.

Defendant's Exhibit (DP) No. 261

6172

April 2[illegible]th, 1[illegible]8.
[illegible] FILE [illegible]

Olds Motor Works,
Lansing, Michigan.

Gentlemen:- ATTN. L.D. WATSON, PUR. AGT.

Answering your letter of April th, you may look for a decided improvement in the Drab back situation.

The samples which accompanied your letter were taken from shipment made to you in Feb.or the early part of March. At that time our supply of this color was uncertain. You will recall that at the time you were badly in need of the material and naturally we were doing everything possible to get goods to you. Our entire organization thoroughly understands the necessity of keeping the Drab back at a uniform color and we have done everything possible to maintain a standard. This, it has not been possible to do, on account of the uncertainty in the raw material market which made it necessary for us to change our source of supply several times. At the time we manufactured this particular lot of goods, we knew that the Drab was not a close match to that previously furnished you and it was our intention to take the matter up with you and furnish sample before shipping the material. However, when you became so badly in need of goods we overlooked doing this in the ~~effort~~ strain of getting some material to you.

On March 20th, in answer to your letter of March 14th, we sent you two samples of the Drab back material which we are making at present. The material started to come through in this color about the middle of March and as explained in our letter of the 20th, we fully expect to be able to maintain this shade on future shipments. We have a large supply of this color dye on hand and we are quite sure that you will be entirely satisfied with material shipped out by us after March 15th.

Naturally we all feel very sorry on account of the trouble had with Drab back material, but we feel confident in assuring you that this difficulty has now been overcome and will not be experienced in future shipments.

Yours truly,

3976

Defendant's Exhibit (DP) No. 262

6173

Letterhead of

DU PONT FABRIKOID COMPANY
Wilmington, Delaware

SALES DEPARTMENT

October 12, 1918.
Dict. Oct. 11, 1918.
OUR FILE "HAL"

J. A. Haskell, Vice-president,
General Motors Corporation,
1764 Broadway,
New York City.

My dear Mr. Haskell:—

You asked me sometime ago relative to various complaints from the Olds Motor Works on our Rayntite top material, where the drab back was not of a uniform color.

At the time these troubles were most in evidence, after June, 1917, we were having a great deal of difficulty in securing a sufficient supply of uniform dye. It was impossible to get our entire supply from one source. Consequently our material did not run uniformly in this respect —on the other hand, that of our competitors did not. The Olds Company made several complaints regarding off-color, especially in view of the fact that some of our shades were materially different than competitive material which they had, and in two instances during September and November, 1917, we took back from them some of these goods. Later our dyes became more uniform and on some later orders from Olds the plant actually did use some of the returned goods which corresponded very closely to our stan-

dard at that time, the Inspectors assuming there would be no objection on the part of the Olds Company.

At the present time our color is very uniform and we believe when we again have the opportunity of figuring with Olds or any of the other General Motors Units, we shall be able to satisfy them, not only as to the shade of drab, but the uniformity, and while our shade is lighter than some of our competitors, we feel it is a better shade and this has been proved by our having supplied the Chevrolet Company with large quantities of it to their entire satisfaction, and as a matter of fact they have changed their standard from that heretofore supplied by the Chase Company to the Fabrikoid Standard.

Yours very truly,

/s/ CHAS L PETZE
DIRECTOR OF SALES

HAL/mlm

NOTE. At top right is time stamp "Received Oct 14 1918 J. A. Haskell." To right of addressee caption is written notation "ack & wrote Mr Verlinden 10/15"

Defendant's Exhibit (DP) No. 263

E. I. DU PONT DE NEMOURS & COMPANY
DOLLAR SALES OF COATED AND COMBINED FABRICS TO THE OLDS MOTOR WORKS, 1922 TO 1930

Year	Newburgh Sales	Fairfield Sales	Total du Pont Sales	Open Cars Manufactured	Newburgh Sales Per Car Manufactured	Fairfield Sales Per Car Manufactured	Total du Pont Sales Per Car Manufactured
1922[1]	33,180	176,968	210,148	16,749	1.98	10.57	12.55
1923			82,491[2]	23,466			3.52
1924			252,635[3]	22,722			11.12
1925			52,703[4]	4,520			11.65
1926			42,263	5,734			7.37
1927			16,079[5]	4,217			3.81
1928	16,427	95	16,522	3,012	5.45	.03	5.48
1929	3,974	0	3,974	3,545	1.12	.00	1.12
1930			0	3,500			

[1]Sales taken from GM T. Ex. 151. Du Pont has no records of sales to Olds in 1922.

[2]Olds purchased most of its requirements of coated fabrics from sources other than du Pont.

[3]Olds adopted artificial leather for seat upholstery on a new low priced model about the middle of the year 1924. Olds began to use uncoated fabrics for auto tops and purchased its requirements of this material from du Pont.

[4]Olds discontinued the use of artificial leather for seat upholstery about the middle of 1925.

[5]Olds purchased its requirements of combined uncoated decking from other sources in 1927 and the following years.

Sources: General Motors Corporation Production Records.
Du Pont Accounting Records—Accounts Receivable Ledger.

9279

6125

Defendant's Exhibit (DP) No. 264

6176

Mr. C. O. Miller, Feb. 8th, 1922.
Oakland Motor Car Co.,
Pontiac, Mich.

Dear Sir;—

Confirming conversation of today.

In consideration of the agreement as outlined below we agree to cancel any undelivered yardage on the contract you now have with us.

You agree to take from us during the year 1922, all of your requirements of whatever qualities you desire of top, curtain and upholstery materials, manufactured by us, paying therefor our current list prices less a discount of 20 and 10% subject to the further regular cash discount which you are now enjoying and subject to your present terms of settlement.

As variations in market value of grey goods occur, based on drills at 28¢ per lb., sheetings at 45¢ per lb., sateens at 29¢ per lb., and moleskins at 34¢ per lb., which are the present market values and on which our present lists are based, to a degree that would warrant the issuance of new lists by us, such new lists will be issued and prices on same revised to the extent that such variations in the market values of grey goods have occurred.

It is agreed that variations of less than 4¢ per lb. in the market value of grey goods, will not necessitate the issuance of new lists.

Yours very truly,

E. I. DU PONT DE NEMOURS & COMPANY
FABRIKOID DIVISION
Division Manager.

CLP-K
Accepted:

NOTE: The words "All Division" are handwritten in the upper right hand corner. Illegible handwritten notations appear in lower left, and initials in right margin opposite second paragraph.

E

3980

Defendant's Exhibit (DP) No. 265

E. I. DU PONT DE NEMOURS AND COMPANY
DOLLAR SALES OF COATED AND COMBINED FABRICS TO THE OAKLAND MOTOR COMPANY, 1922 TO 1933

Year	Newburgh Sales	Fairfield Sales	Total du Pont Sales	Open Cars Manufactured	Newburgh Sales Per Car Manufactured	Fairfield Sales Per Car Manufactured	Total du Pont Sales Per Car Manufactured
1922[1]	80,000	200,000	280,000	14,830	5.39	13.49	18.88
1923	62,807	NA	NA	23,424	2.68		
1924	38,604	91,958	130,562	18,460	2.09	4.98	7.07
1925	15,489	28,441	43,930	5,042	3.07	5.64	8.71
1926	34,108	9,407[2]	43,515	8,723	3.91	1.08	4.99
1927	67,243	8,015	75,258[3]	12,209	5.51	.66	6.17
1928	81,570	7,177	88,747	14,050	5.81	.51	6.32
1929	41,407	618	42,025	8,372	4.95	.07	5.02
1930	8,565	0	8,565	3,202	2.67	.00	2.67
1931	55	416	471				
1932	12,428	0	12,428				
1933	28,532	0	28,532				

[1]Sales for 1922 are from GM-T. Ex. No. 151. Du Pont has no record of sales to Oakland for 1922.

[2]Oakland started using combined uncoated fabrics on that part of its production formerly using Pontop. These fabrics were not supplied by du Pont and Pontop was thereafter used for service parts only.

[3]Du Pont supplied Oakland with a substantial part of its requirements of artificial leather in 1927 and 1928 but had little of its top business after 1922.

Sources: General Motors Corporation Production Records.
Du Pont Departmental Trade Records—Fabrics Division Sales Records.

3931

6172

Defendant's Exhibit (DP) No. 266

6178

COPY

Letterhead of
FISHER BODY CORPORATION
DETROIT, MICH.

July 6th, 1925.

E. I. du Pont de Nemours Co.,
Newburgh,
New York.

Attention—Mr. Henry Lindsey.

Dear Mr. Lindsey:—

It has just come to my notice that you recently have changed local representatives and as an old friend of mine, Mr. J. Henry Smith, son of the former Senator Smith of New Jersey, is in quest of a position of this nature. He has had wide selling experience, beginning with his father, and his last position was with the Pullman Car Company of Chicago.

He is a well met fellow and a perfect gentleman and has entree to all the automobile manufacturers and accessory trade, and I think that he would be a very valuable man to you if you could place him in the Detroit territory. If you can consider this request, I would be very pleased to hear from you.

Thanking you very kindly, I remain

Your very truly,

John T. Allmand (Signed)

JTA:K

E

Defendant's Exhibit (DP) No. 267

COPY

6179

FISHER BODY CORPORATION

DETROIT, MICH.

July 17th, 1925.

Mr. H. A. Lindsey,
C/o E. I. DuPont DeNemours & Co.,
Newburgh, New York.

Dear Mr. Lindsey:

I have your letter of the 11th inst., which is in acknowledgment of mine of the 6th inst., subject my inquiry regarding Mr. J. Henry Smith.

Mr. Smith came into the office Tuesday of this week and informed him that I had been in touch with you and had received a reply of inquiry and advised him to wire you which I believe he has.

Answering further your inquiry, will say that Mr. Smith is a son of ex-Senator Smith of New Jersey who were formerly in the patent leather business, that is, manufacturers. Mr. Smith sold his father's line until they gave up. After that he handled a line of valves for automobiles for a number of years and is, I believe, one of the best acquainted men in the industry.

Some three years ago the Pullman Car Company got him to manage their body department, who were building bodies for the Packard Motor Car Company and others. They quit the Body business at the beginning of the year. Since then Mr. Smith, to my knowledge hasn't done anything, and did not know that he was in quest of a position until some few weeks ago.

Will say for Mr. Smith that he is a very fine gentleman, makes a very good appearance and is well liked by the trade, and has entree I believe second to no man calling on the trade.

While he is not familiar with your line he is a good salesman nevertheless, very energetic and enthusiastic with his line that he is selling and am sure that if you should see fit to engage Mr. Smith that you will not regret it as I believe that he can greatly add to your sales in t is territory, and if you see fit to communicate directly with Mr. Smith, he left me his present address which is C/o The Pullman Car and Manufacturing Corporation, Chicago, Ill. He still makes his office with the Pullman Company.

With Kindest regards, I remain

Yours very truly,

JTA:K

John T. Allmand (Sgd.)

3933

Defendant's Exhibit (DP) No. 268

6180

PERSONAL & CONFIDENTIAL

Letterhead of
E. I. DU PONT DE NEMOURS & COMPANY
Incorporated

Fabrikoid Division
Newburgh, New York, U. S. A.
Cable Address 'Fabrikoid New-York'

COPY OF LETTER
for :
Mr. W. P. Allen

September 1, 1925.

Mr. J. Henry Smith,
Pullman Car & Mfg. Corp.,
Sales Department,
Chicago, Ill.

Dear Mr. Smith:

This is to confirm the understanding arrived at by you, Mr. Allen, Mr. Lindsey and the writer at Wilmington on August 19th.

We understand that you will come promptly into the employment of our Company in the capacity of special salesman to the automobile trade for the products of this Division, including Fabrikoid and Rubber-coated fabrics, and that you will devote your time and energies exclusively to the work of selling, and in all practicable ways aiding us to sell, these products to that trade. In this undertaking,

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we understand you will make our Detroit sales office your headquarters, but that you will aim to cover the automobile trade generally, working directly with the important customers there and at other points, and working also thru and with the aid of our regular sales force in accord with the exact arrangements which we will later mutually agree upon as being best calculated to result in the largest obtainable volume of sales.

It is agreed that your compensation will include a salary at the rate of $15,000 per year and commissions at the rate of 4/10 of 1 per cent on our entire volume of automotive sales, including sales to (1) automobile builders, (2) body builders selling to automobile builders and (3) automobile bus builders. In applying this commission arrangement, it is understood that the billings issued in any particular month or other period of time will be taken as representing our "sales" for that period.

Yours truly,

N. P. Wescott,

Division Manager.

N. P. Wescott/me

NOTE: There are two stamps on this document reading as follows: "WR" and "Noted WPA". There are check marks to the right and underneath the name of "W. P. Allen" at the top of the page and two illegible handwritten notations at the top of the page.

Defendant's Exhibit (DP) No. 269

FORM 1966

E. I. DU PONT DE NEMOURS & COMPANY
(INCORPORATED)

FABRIKOID DIVISION
NEWBURGH, NEW YORK, U. S. A.

6182 Answered Sept 30/25

September 29, 1925

E. R. CATHCART - MANAGER FAIRFIELD PLANT

FISHER BODY

On September 28th we drew orders #F-3878 and F-3877 calling for 17 179 yards of our Pontop #554 and 62 187 yards of our Pontop #554 respectively. These orders are to be manufactured in strict accordance with the sample which was submitted to Fisher Body sometime ago and tagged with your designation R-30-400. This material is to be finished in Cobra glazed, all bright, using two coats, having a total finished weight of 46 oz. using a 1.87 Drill combined to a 2.91 sheeting. The width should be 65 1/2 inches and should not run under this specified width. The Fisher Body Co. asked us to ship this material in at least minimum carloads.

Should there be anything that is not clear regarding the specifications of these two particular orders, will you please get in touch with us at once as we do not wish manufacture to be started until the specifications are entirely understood by you.

It goes without saying that these orders are very important due to the fact that they are the first real business we have received from the above customer calling for rubber deck material. We trust that you have the necessary raw material in stock and that you can make deliveries as specified.

H. A. LINDSEY, DIRECTOR OF SALES.

F.A.Price:EMP

F. A. Price

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Defendant's Exhibit (DP) No. 270

Copy

61832

Detroit, Michigan
Sept. 30, 1925

H. A. Lindsey, Dir. of Sales,

FISHER BODY CORP.

I surely hope every effort will be made to make positive delivery by November 1st of the Rubber Pontop No. 554, now on order for Fisher.

I believe as soon as they see the goods in bulk we will obtain additional orders since many in their organization have at least informally expressed themselves.

They are having a great deal of trouble with Cars and I believe we can get a good share of this business. You can ship late in October and date bill November 1st.

We are working for additional orders before arrival of goods and hope we will be successful on that basis.

Mr. Allmand asked me to tell you we should have some one diligently watch our compound so we will have no trouble on these orders.

JHS:BB

J. Henry Smith

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'Defendant's Exhibit (DP) No. 271

6184

November 20, 1925.

To: W. F. ALLEN, GENERAL MANAGER.

FROM: FABRIKOID DIVISION.

REPORT FOR OCTOBER 1925.

EARNINGS:

Net receipts were as follows:

	October, 1925	September, 1925
Fairfield	$ 24,575.28	6,621.39
Newburgh	72,548.52	48,415.51
Total	97,123.80	55,036.90

The principal contributing factors to the marked increase in Fairfield earnings are better Chevrolet prices, lower costs, and further manufacturing improvement in the raincoat business. Chevrolet shipments were at an increase of 6¢ a yard over last month with a resulting increase in profit of roundly $11,000. The spread of fixed cost over the lengthened manufacturing month caused a decrease of approximately $2,000 in costs. Raincoat business thru improvement in cost showed a profit of roundly $5,700, an increase of approximately $2600 over last month.

Newburgh earnings of roundly $79,000 on current sales are in line with recently established levels. The final net of $72,548 is after absorbing approximately $7,000 adjustments on old deck material. This loss forms the major portion of the total charges expected during the fourth quarter. Newburgh earning power is well distributed over all departments of activity.

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OUTLOOK:

Fairfield volume will continue high over the remainder of the year. Earnings on current sales should continue at a fair level for the remainder of the year; and we have good reason to expect sustained volume over the first quarter of the new year, and to look for earnings on a fair level.

Newburgh volume and earnings will continue high over the remainder of the year. We see no reasons to look for any weakening during the first quarter of the new year.

Both plants will probably show a decrease in November automobile volume, when shipments may be deferred while manufacturers are taking inventories. Any November recession will, however, be offset by increases in December.

FAIRFIELD BRANCH:

Sales.

BILLINGS COMPARISON

	Oct. 1925	Sept. 1925	Jan.-Oct. 1925	Jan.-Oct. 1924
Gen. Motors	$ 156,001	154,184	700,400	782,241
* Domestic	164,734	135,848	1,076,738	1,222,952
Ventube	11,945	8,230	150,475	110,694
Export	61,384	91,147	643,843	306,234
Total	$ 394,064	389,409	2,571,456	2,422,121

* Excluding General Motors.

Billings for 1925 to date are 6% above the corresponding period last year. General Motors to date 1925 volume is now but 10% below the corresponding period for 1924, whereas at the end of the middle of the year, the deficiency was 80%. General domestic business is now but 12% below

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3988-A

last year. Ventube and export, because of expansion in sales, are respectively 35% and 110% above last year.

—3—

BUSINESS BOOKED.

BOOKINGS COMPARISON

(Yards Basis)

	Oct. Yards	Sept. Yards	Jan.-Oct. 1925 Yds.	Jan.-Oct. 1924 Yds.
Gen. Motors	201,692	49,020	1,413,506	1,012,358
Domestic*	302,246	282,274	1,865,710	1,397,827
Ventube	24,013	12,688	148,331	95,353
Export	53,985	100,423	893,604	512,665
Total	581,935	444,404	4,321,151	3,018,203

* Does not include General Motors.

While billings to date 1925 are but 6% above 1924 to date, bookings show a 43% improvement. Because of the absence of fairly definite ideas as to the volume of Chevrolet first quarter requirements recently booked, no recognition is yet taken of this sale in our booking figures. The improvements in Fairfield volume already realized and the potential improvement as promised by bookings are reflected in the following tabulation:—

	% Increase in Billings Jan.-Oct. 1925 over Jan.-Oct. 1924	% Increase in Bookings Jan.-Oct. 1925 over Jan.-Oct. 1924
General Motors	10%	40%
Domestic*	12%	33%
Ventube	35%	56%
Export	110%	74%
Total	8%	43%

* Excluding General Motors.

Except in the export field where we have suffered the loss of Nelden Body bookings, increased strength is indicated throughout.

3988-B

Trend of Business. All fields give promise of continued heavy consumption over the remainder of this year and during the first quarter of the new year. It is expected that our Company's portion of this consumption will strengthen in all fields except export, where a loss, hoped to be but temporary, has been met with in Australia.

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Prices and Competition: No general price changes were made in October. Although not sufficiently high to permit of earning a full fair return, prices held firm with but few exceptions.

Export. Nelden's Meter Body Builders, Ltd., of Australia, have purchased six months' requirements, or 200,000 yards, from the J. C. Haartz Co. at a price believed to be substantially below ours. This business has heretofore constituted about half of our export rubber sales.

Complaints. There have been no complaints of special significance. October adjustments cost $350.

Production. Mainly because of the long operating month, production rose to 954,000 stads from 790,000 stads in September.

Experimental Development. Guayule, a Mexican wild rubber, selling at half the price of the cultivated product, is being adopted in cements at a saving of approximately $2,500 per month. The possibility of its being used in compounds is being actively explored.

Raincoat material has been the subject of much improvement and refinement and new numbers re-enforcing the line are under development. Our gum rubber line is now very confidently believed to have been developed to the point of being fully equal in quality to the very best competitive goods.

Safety. There were no major or sub-major accidents in October.

Appropriations. Major construction projects totaled approximately $62,000 and minors $5,000.

Inventories. Inventories are roundly $8,000, or 2% in excess of standard.

Sales of Special Significance. Last month marked the beginning of rubber deck material sales to Fisher. This initial order was for 70,000 yards and sales totaling 110,000 have been made since. We have closed with Chevrolet for 1926 first quarter requirements for open cars. Anaconda has placed an order for a carload of Ventube.

—5—

Rubber Specialties. To properly and fully advance the sales of rubber specialties, a small but complete Sales Department has been set up at Fairfield. Mr. J. McLaughlin, a man of wide experience in this field, has been employed as Sales Manager.

NEWBURGH BRANCH:

SALES.

BILLINGS COMPARISONS

	Oct. 1925	Sept. 1925	Jan.-Oct. 1925	Jan.-Oct. 1924
Gen. Motors	$ 76,067	116,729	979,260	867,850
Domestic	306,990	303,792	2,839,478	2,484,360
Tontine	58,817	70,899	534,871	286,604
Export	102,504	97,063	879,407	555,907
Total	$ 544,378	588,483	5,233,014	4,194,721

Excluding General Motors & Tontine.

All departments show increases to date 1925 over to date

3988-D

1924. Total billings are 25% greater. General Motors volume is 13% higher, general domestic 14%, Tontine 86% and Export 58%.

BUSINESS BOOKED.

BOOKINGS COMPARISON

(Yards Basis)

	Oct. Yards	Sept. Yards	Jan.-Oct. 1925 Yds.	Jan.-Oct. 1924 Yds.
General Motors	79,273	33,335	981,869	721,336
* Domestic	526,359	380,374	4,932,650	3,732,898
Tontine	144,325	129,983	1,189,335	588,049
Export	145,207	99,930	1,014,108	643,592
Total	895,164	643,622	8,117,962	5,685,873

* Excluding General Motors & Tontine.

While billings show a 25% increase to date 1925 over to date 1924, bookings indicate increased strength of 43%. This improvement

in bookings applies to all fields, General Motors strengthening 36%, general domestic 32%, Tontine 102% and export 57%.

Prices and Competition. No general price changes were made in October. Prices hold firm at a fair level.

Trend of Business. Continued heavy consumption is looked for over the remainder of this year and during the first quarter of the new year. Newburgh is expected to hold firm its present generous share of the consumption and because of the Company's direct control over marketing to begin a renewed growth in Tontine sales.

Export. Sales of 7,800 yards of Tontine to Australia encourage us as to the future of this outlet. The export situation is satisfactory in general.

3988-E

Sales of Special Significance. Chevrolet and Buick requirements for the first quarter of 1926 have been taken. Additional sales of 75,000 yards of car curtain material have been made to Fisher Body. Backstay, the large gimp manufacturer, has placed orders for delivery of 100,000 yards of drills during November, December and January.

Complaints. Newburgh adjustments cost $6,300, exclusive of the Fisher Body total of about $7,000 on old top material above referred to. There have been no items of special significance.

Production. Chiefly because of the long operating month, production rose to 1,100,000 stads from 838,000 stads in October.

Tontine. Study is being given to the problem of advertising in 1926. At present, a plan is under consideration of which the cost would be probably $65,000, which amount is about 20% more than the 1925 expenditure. The transfer of activities from the Ordinator Co. is being prepared for as rapidly as possible.

Experimental Development. A beginning has been made in the development of a pyroxylin coated raincoat material. This product is intended to enter a higher priced field than that in which our rubber

material is sold. A special auto curtain material for Fisher Body Chevrolet work is the subject of active study.

Appropriations. Major construction projects totaled approximately $40,000 and miners $2,500.

Safety. One major, but no sub-major, accidents occurred in October. A coating machine operator, attempting to re-

lease a pile-up between tension rollers, caught and injured his thumb to such an extent that amputation was necessary. Operators are being instructed to report to their Supervisors when a pile-up occurs and the Supervisor will relieve the condition by cutting the goods, thus removing all hazard.

Inventories. Inventories are roundly $240,000 above standard. Of this excess $94,000 is in Pyro, $40,000 in export consigned stocks and $30,000 in Tontine cloth. These items are not provided for in the standards. There remains a true excess of $76,000, which is due chiefly to modifications of Chevrolet's schedules. A thorough study of working capital standards is being made with a view to fitting them to present conditions.

Pyre. Pyre consumed in October totals 143,000 pounds. The pyre reservoir has been completed and 2,000,000 pounds, roughly two-thirds of the amount to be stored at Newburgh, is now here and under water.

N. P. Wescott
Division Manager.

3988-G

Defendant's Exhibit (DP) No. 272

6192

June 22, 1926.

To: W. P. Allen, General Manager.

From: Fabrikoid Division.

REPORT FOR MAY, 1926.

EARNINGS:

Net receipts were as follows:

	May, 1926	April, 1926
Fairfield	$ 1,463	$ 1,288
Newburgh	47,470	68,619
Total	$48,933	$69,907

Fairfield's result for the month is adversely affected by excessive rubber costs of $22,000 (excess of actual cost over February purchases for May consumption), by abnormally high seconds in carriage cloth manufactured to the extent of $10,000, and by over-coating to the extent of $3,000. The last two elements of loss are largely attributable to rush production to meet sudden and unexpected demands. In the final net result, a profit of roundly $11,000 for the month on carriage cloth was reduced by a loss of $9,500 on specialties, where the main burden of our excess rubber cost was felt.

Newburgh's gross margin of 24% was above recent levels, but the final net is low because of somewhat diminished volume and abnormally high selling expense. Into

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May selling expense was charged a final item of $4,500 incident to liquidation of the Ordinator Company; and because of deferred handling of traveling

expenses in April, this item was $4,000 high in May.

OUTLOOK:

The proved superiority of our rubber deck materials, backed up by special selling effort, has now apparently resulted in securing for Fairfield the major part of the Fisher Body business; and present indications are for a good level of carriage cloth production in June, July and August. Volume in all specialty lines is now off; and although improvement is looked for, normal activity may not be reached until fall. Earnings for July and later months should improve substantially because of the lower cost at which rubber will be consumed in manufacture.

The increased complexity of the requirements of the automobile industry and the establishment of specialty manufacture have radically changed the character of the Fairfield business. Study of the activities and results of the work of this plant over the past year has seemed to indicate clearly the need of a more direct and comprehensive local control and correlation of the manufacturing and selling activities of that branch of the business. The Assistant Division Manager has therefore been relieved of other duties and transferred to Fairfield, with general control over, and responsibility for, the activities of that branch of that Division; while one of the Assistant Directors of Sales is being placed in direct local control of the marketing activities of Fairfield products. Substantial improvement in

results is expected to result from this important change in organization.

At Newburgh, bookbinding and traveling goods sales will suffer seasonal recession in June and July. Automotive business is looked for at good rates. Bookings in June of general domestic business are encouraging. Earnings are expected to hold in line with recently established levels.

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FAIRFIELD BRANCH

Sales.

FAIRFIELD BILLINGS
COMPARISON — DOLLARS

	May 1926	April 1926	Jan-May 1926	Jan-May 1925
Carriage Cloth—G. M. C.	$198,480	$120,120	$ 680,391	$ 46,528
" " —All oth.	63,704	78,039	318,337	312,167
Specialties—Ventube	24,252	14,062	89,967	78,739
" —All Others	85,683	93,517	409,352	133,576
Export—All Products	38,422	52,650	264,764	279,613
Total	$409,541	$358,388	$1,762,811	$850,623

Business Booked

FAIRFIELD BOOKINGS
COMPARISON — YARDS.

	May 1926	April 1926	Jan-May 1926	Jan-May 1925
Carriage Cloth—G. M. C.	69,200	147,600	426,134	2,753
" " —All Others	23,818	75,483	173,827	342,082
Specialties—Ventube	7,965	37,494	78,882	75,287
" —All Others	121,107	92,232	817,128	241,610
Export—All Products	28,190	51,740	182,461	354,415
Total	250,280	404,549	1,678,432	1,016,147

* Gum Specialties converted to yard basis.

The low May bookings figures should be offset by June bookings, which are approximately 400,000 yards as of the 19th of June. The increase is due to large General Motors and Fisher Body bookings.

3

Prices and Competition. There was no general Fairfield price list change during the month. The Haarty Auto Fabrics Co. has taken part of the Chrysler Teal business at a price 15 cents below ours. In general, however, price schedules are being quite well maintained. It is reported that the Cotex Company, leather substitute manufacturers of Newark, N. J., are about to begin the manufacture of carriage cloth, with a capacity of 25,000 yards per week.

Export Ventube. During the month, sales of fair quantities of Ventube were made to Mexico, Peru, Siberia and South Africa.

Complaints. No Fairfield complaints of special significance received during the month.

Experimental Development. Further tests of the new Fairfield deck material finish Everbrite confirm our belief in the durability of its lustre. We are now making 1,000 yards a day and expect to be in full production of this finish around July 1st. Examination of competitive Teal topping shows that none of those products so far examined possess the virtues of highly fast dyeing and thorough waterproofing, merits of our product thought to be necessary for a durable top. Competitive Teal cloth has been found to be more uniform than our product because of higher grade weaving, and the adoption of this better weaving is being considered. Further refinements have been made in the manufacture of our gum specialties, which now rank with the best on the market.

Production. Fairfield May production was 764,309 stads, as against 745,037 stads in April.

Safety. There were no major or sub-major accidents at Fairfield in May.

Construction Appropriations. In May, Fairfield Minor Appropriations totaled $150; there were no majors.

Fairfield Inventories.

	Standard	Actual
Raw	$382,750	$496,264
Semi-finished	78,990	73,879
Finished	271,840	269,490
Suspense		27,054
Total	$733,580	$866,687

The excess in Fairfield inventories is due largely to the failure to realize fully expected volume in both carriage cloth and specialties. Fisher Body and Chevrolet are now taking in good volume the material for which contract cloth had been provided. Active effort is being made to overcome specialty excesses as rapidly as possible. Inventories dropped roundly $100,000 during May, and a further marked reduction is hoped for in June and July.

NEWBURGH BRANCH:

Sales.

NEWBURGH BILLINGS
COMPARISON — DOLLARS

	May 1926	April 1926	Jan-May 1926	Jan-May 1925
General Motors	56,758	$ 85,756	$ 370,880	$ 412,253
Domestic—General	262,966	326,051	1,422,539	1,417,118
Tontine	89,838	75,888	328,766	259,170
Export	79,158	85,076	468,916	405,987
Total	$488,720	$572,771	$2,591,101	$2,494,528

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Business Booked.

NEWBURGH BOOKINGS
COMPARISON — YARDS

	May 1926	April 1926	Jan-May 1926	Jan-May 1925
General Motors	53,883	323,681	480,989	12,773
Domestic-General	315,554	432,408	2,476,734	2,266,624
Tontine	162,700	143,889	726,913	587,826
Export	51,567	78,261	429,728	450,841
Total	583,704	978,239	4,114,364	3,318,064

As of June 19th, Newburgh bookings stand at roundly 900,000 yards. This indicates that June should offset the low May figure. The improvement is due to good General Motors bookings.

Prices and Competition. There has been no general change made in the Newburgh price-list. Somewhat lower but still quite satisfactory net prices are being quoted important automotive accounts. Prices in the other fields hold quite well in line with the quantity discount schedule.

Sales of Special Significance. We have sold the Backstay Machine and Leather Company 100,000 yards of drill qualities for delivery 30,000 yards in July, with the remainder spread over the rest of the year.

Export—Australia. Our Australian Agent, Mr. R. F. Higgs, has just spent a fortnight with us. Mr. Higgs looks for a continuation of business in Australia around present levels.

Complaints. No Newburgh complaints of special significance received during the month.

Production. Newburgh May production was 770,068 stads, as against 972,742 stads in April.

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Experimental Development. At Newburgh, laboratory work now in progress in connection with general quality improvement aims at obtaining better dispersion of pigment particles. These studies include consideration of mechanical dispersion methods, as well as dispersion by means of chemical peptization. In this we are working closely with Parlin, Philadelphia and Experimental Station, so as to make use together of any successful results. The use of a softener in the top coat of non-exuding Fabrikoid reduces considerably the tendency toward piping. (Piping and cold cracking are the two most serious drawbacks to the use of this product for top material). A series of plant runs are under way employing the high alcohol solubility cellulose nitrate developed in conjunction with Parlin. The first experiments have indicated a high exudation temperature, even when raw castor oil is used. A broad experimental program has been started to develop a Super Fabrikoid adapted for automobile deck material. The study begins with the choice of a double texture product instead of single texture because of the greater assurance of freedom from leaking; the study of relative merits of bone and carbon black in conjunction with various extenders; comparison of results obtained using 301 oil, 334 oil and various proportions of the two; investigation of results using various types of pyroxylin, and the application of Chinawood-oil—pyroxylin lacquer as a finish. It is aimed to come as near as possible to producing a deck material which, like Duco, should last the life of the car.

Construction Appropriation. May Minor appropriations for Newburgh totaled $7,372; Majors—$65,830.

Safety. There were no major or sub-major accidents at Newburgh in May.

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Newburgh Inventories.

	Standard	Actual
Raw	$474,470	$ 796,886
Semi-finished	141,600	171,215
Finished	237,840	300,148
Suspense		9,514
Total	$853,910	$1,258,733

Roundly $80,000 of the excess Newburgh inventory is due to the stock of smokeless powder not provided for in the standards. The remaining excess is chiefly in standard Fabrikoid cloths and results largely from the failure to realize fully sales expectations provided for by contract cloth buying. We expect to accomplish substantial decreases in inventory during June and July.

Smokeless Powder. Consumption during May was 97,564 pounds; Nitrocellulose consumption was 4,282 pounds.

N. P. Wescott,
Division Manager.

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Defendant's Exhibit (DP) No. 273

6198

October 30, 1931

MR. J. THOMPSON BROWN,
VICE PRESIDENT

J. HENRY SMITH

Enclosed salary card represents an additional downward adjustment of $125.00, effective November 1st, due to decreased importance of Mr. Smith's position as Manager of our Fabrikoid Automotive Sales in Detroit.

Prior to the employment of Mr. Smith we were unable to secure any Fabrikoid business from Fisher Body, and for a long time after becoming established as one of their sources of supply we were very largely dependent on him to hold a share of that business.

With the improvement in our relations with the Fisher organization, and particularly since Mr. Staples has established satisfactory contacts with Fisher officials in connection with Fabrikoid purchases during the past year, Mr. Smith's influence has assumed considerably less importance from our point of view; in fact, we are continuing him mainly for the purpose of avoiding possible friction with the Fisher organization in view of the fact that one of their officials was instrumental in bringing about Mr. Smith's employment by us.

J. J. MOOSMANN

JJM:M

NOTE: A penciled bracket is drawn under J. Henry Smith. File copy appears diagonally across the page.

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Defendant's Exhibit (DP) No. 274

6199

Copies to:
N.P.Wescott--NEWBURGH
E.R.Cathcart--FAIRFIELD
Dr. J. Couture

E. I. DU PONT DE NEMOURS & COMPANY
(INCORPORATED)

CHEMICAL DEPARTMENT
WILMINGTON DELAWARE



March 25, 1926
Dict. 3/24/26

FAIRFIELD
--For Mr. M. N. Nickowitz--

OUR FILE ESR-86-20

I saw Mr. Wescott today for a few minutes in Mr. Richter's office and talked to him about top material. He told me that one of the reasons why our pyroxylin top material which we call Pontex has been given up by the Seaman Body Company is that the film seems to be somewhat soft so that it mars or marks readily. It seemed to me that this has a bearing on the "streak" which we obtain on our asphalt-finished product. Personally, I have been more afraid of the "streak" as an objectionable feature than of the crazing, but apparently the addition of V-2096 practically cures the streak as well as the crazing. However, I suggest that you talk to Mr. Bristol and Mr. Mollau about the trouble which they have had with Pontex so that you may be in a better position to decide how free from "streak" our product must be in order to be acceptable.

Mr. Wescott also told me about some tests made by the Fisher Body Corporation of various rubber-coated top materials. He said that they placed du Pont and Duratex at the top and about on a par, du Pont being slightly better. Chase came next and considerably below these two. Then came Haartz, and lastly Carr. Have you any exposure tests that show any such quality for Duratex? It was my recollection that you placed Chase about on a par with du Pont or perhaps a little below it.

HAMILTON BRADSHAW
ASSISTANT CHEMICAL DIRECTOR

HBtA
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Defendant's Exhibit (DP) No. 275

6200

GENERAL LETTER

No. 23

M. N. NICKOWITZ

May 21, 1929

EVERBRIGHT PONTOP

You will be keenly interested in the success and popularity which Everbright Pontop has attained. Since its development, and introduction in 1926, about six million yards have been put in service. In this time it has not been necessary to replace a single original top because of leakage or failure of the Everbright Finish.

The Plant is now turning out an enormous daily volume. On one day a few weeks ago, something over thirty seven miles of Everbright Pontop were shipped, in addition to the numerous other products manufactured at Fairfield, such as Hospital Sheeting, Leatherette, Gasket Material, Teal, etc. Additions and enlargements are just being completed which will provide increased capacity for new business, which will undoubtedly develop during the next few months.

Visualize the following procession and you have a picture of the cars which are now being built with Everbright Pontop decks:

On The Road

Chevrolet	Sedan-Coach-Coupe	(43")	Cobra Grain
Chevrolet	Sedan-Delivery	(60")	Cobra "
Ford	Tudor Sedan	(62")	H-9 "
Ford	Truck Cab	(44")	Cross Auto"
Ford	Panel Delivery	(64")	H-9 "
Ford	Station Bus Delivery	(60")	H-9 "
Pontiac	Sedan-Coach-Coupe	(43")	Cobra "
Oldsmobile	Sedan-Coach-Coupe	(43")	Cobra "
Roosevelt	Sedan	(66")	Cobra "
International Harvester	Truck Cab	(60")	Cobra "
Indiana Truck	Truck Cab	(60")	Cobra "
Buick	Hearses and Busses	(54" & 60")	Cobra "
International Motor	Mack Busses	(50")	Cobra "
Paramount	Taxicabs	(66")	Cobra "
Studebaker	Delivery Wagon	(66")	Cobra "
Yellow Cab	Taxicabs	(64")	Cobra "
General Motors Truck	Delivery Wagons	(54" & 70")	Cobra "
	Cabs - etc.		

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In Production But Not Yet On Market

Buick (1930)	All Black Deck Models	(45")	Cobra Grain
Marquette	All Black Deck Models	(43")	Cobra "
Studebaker	Sedan	(66")	Cobra "
Studebaker	Coach	(64")	Cobra "
Studebaker	Collapsible	(54")	Modern "
Ford	Fordor Sedan	(62")	H-9 "
Ford	Town Sedan	(46")	H-9 "
Ford	Visors	(56")	H-9 "

We feel that all in the organization can take a just and pardonable pride in the place which Everbright Pontop occupies in the field of deck materials; and it is hoped that the above list will serve as a stimulus to the Sales Force to go out and add new names to it. Information has been received that several high-priced cars will shortly adopt Everbright Pontop. You will be advised as they get on the band wagon.

Quality, Sales Pressure and Service, coupled with reasonable price, have been responsible for the results. Let us press home the advantage and line up further new accounts until the mill is forced to hang out the "Sold Up" sign.

T.A.Nalle/rd

SALES MGR. FAIRFIELD AUTOMOTIVE PRODUCTS.

T A Nalle

Defendant's Exhibit (DP) No. 276

6202

Excerpt from Report of Fabrikoid Division to Executive Committee for February, 1927, dated March 27, 1927

"Information has reached us this week that Fisher has decided to use pyroxylin coated materials henceforth for Buick jobs. They have been buying approximately some 30,000 yards of 63" rubber material from us each month for this work and it is understood that they expect to begin using pyroxylin on May 1st. Active efforts are being made to secure this business for Newburgh with apparently fair prospects of success. Our business with Fisher on rubber materials for Chevrolet, Pontiac and Olds is apparently not threatened. There have been no complaints from Fisher Body that our rubber material has been defective in any way; and the loss of the business on Buick models is primarily due to the belief of the Fisher Body engineers that pyroxylin is more desirable than rubber because of its stronger claims to lasting lustre."

4001

Defendant's Exhibit (DP) No. 277

6203

Excerpt from Report of Fabrikoid Division to Executive Committee for March, 1928, dated April 21, 1928

"In the automotive field, our expectations have recently encountered a severe setback thru the loss to Textileather of probably the major part, and perhaps all, the business in pyroxylin materials for Buick bodies. This business was taken, according to our information, at an extremely low price (reported to be at least ten cents a yard under our quotation) evidently on the policy of sacrificing profits in order to become re-established in the enjoyment of this part of the Fisher business."

4002

EXCERPTS

July 24, 1929.

TO: W. RICHTER, GENERAL MANAGER.
FROM: FABRIKOID DIVISION.

REPORT FOR JUNE, 1929

• • •

Viewing the picture by separate selling fields, the main points are as follows: (1) automotive sales of Newburgh products are substantially lower than a year ago. This decline is largely in sales to the Fisher Body Corporation, and results in part from their change from pyroxylin top materials to our Everbright Pontop, and in part from their decision to reduce the pyroxylin business given us because of the very large volume of rubber business that is coming to our company.

• • •

FAIRFIELD OUTLOOK

At Fairfield, in the automotive division, the largest individual account, namely, Ford Motor Company, is apparently still on the upgrade. It may be interesting to note that we recently received all of the orders for Ford's closed car deck material placed for their regular July purchases. Other automotive accounts are holding up well, and it is expected that the July final billings will be slightly in excess of those for June, while August should show about a 10% increase over July. Beginning with September, gradual curtailment in automotive business is expected during the remainder of the year.

• • •

The increase in sales may be attributed to the inherent uniform quality of the product, its superiority over com-

petitive materials and the consequent recognition of its value by a large percentage of the automobile body manufacturers.

Of the Everbright Pontop yardage produced during the first six months of 1928, 82% was shipped to General Motors Units. During this period we did not enjoy any business from the Ford Motor Company, whose sales for the first half of 1929 (all of which was Everbright Pontop) amounted to 40% of the total production. 50% of the first six months' production in 1929 was for General Motors Units, while the balance of 10% was divided between other body manufacturers and distributors. The important automobile manufacturers, other than General Motors and Ford, who are now using Everbright Pontop include Chrysler, (who have just adopted Everbright for their 75), Studebaker, and Marmon (Roosevelt).

EXCERPTS

March 20, 1929.

TO: W. RICHTER, GENERAL MANAGER
FROM: FABRIKOID DIVISION

REPORT FOR FEBRUARY, 1929

• • •

Everbright Competition. Recent indications are that the practical monopoly which we have for some time enjoyed on the rubber deck material of durable lustre, may in the future be considerably reduced. Naturally our competitors have been working very actively to overcome this handicap; and while our own tests still indicate a distinct margin of superiority for Everbright Pontop, yet Haartz and others have made substantial advances and the formerly wide gap between their product and ours is narrowing. As an apparent consequence of these improvements, the Ford Motor Company is now buying in small quantities from two competitors, while we are just informed (March 20th) that some part of the Fisher requirements at Cleveland for Chevrolet bodies will be drawn from Haartz. Both these have heretofore been our exclusive accounts on rubber decking for closed bodies. As against these invasions, however, we are fairly well assured of a minimum of 150 000 yards monthly over the next six months from Ford; while we are informed that the new Marquette model, and certain other Buick work (for the past year using Textileather pyroxylin) will be turned to Everbright Pontop; so that our expectations as to total volume are not diminished, though the price factor may become more difficult. With the aid of the Chemical Department we are still vigorously pushing further developmental work on Everbright, in the

hope that we may widen the gap against competitors by further increasing the life of our product; and recent Laboratory results appear encouraging.

Fairfield Export. Fairfield February bookings totaled 54 000 yards, as compared with 73 000 yards booked in January. In general, however, conditions in the export field are satisfactory.

Sales and Items of Special Significance. Total February Fairfield bookings amounted to 660 000 yards as compared with 730 000 yards for January. We have made our first sale to the Durant Motor Company, a relatively small order for teal and bow lining, and we have some reason to expect that we will succeed in developing this new customer into an Everbright account. Fairfield sales in February to leading automotive accounts included 156 000 yards to Fisher, 40 000 yards to Chevrolet and 233 000 yards to Ford. A recent development of special interest is the sale to Studebaker of some 5 000 yards of our new type of colored rubber deck material.

• • •

Sales to General Motors, 1929 to date vs. 1928 to date, are down first because of loss of deck material business where rubber has displaced leather substitutes and second because of a switching from Fabrikoid to metal for body visors. These decreases, which total about $150 000 are partly offset by an increase in sales to Chevrolet of $60 000. The large increase in "Domestic—General" is due chiefly to sales of tablecloth and kitchen shelving products.

Defendant's Exhibit (DP) No. 280

CC: H.L.HOPKINS
~~J.H.SMITH~~
W.FULTON,JR.
FAIRFIELD (2)
E.DOREMUS

TO: E.S.NICKERSON

FROM: H.S.PLANK

6208

Attached is the first report on "Potential Yardage for FABRIKOID Division Materials as original equipment on passenger automobiles", as requested by Messrs. Nickerson and Fulton.

It was made up primarily to show a comparison of possible potential with actual Du Pont sales to the various car manufacturers. Its secondary purpose was to indicate the trend of production by make of cars showing just what manufacturers were on the up or down trend, so that costly plans would not be made to secure potential where a distinct and steady downtrend was noticeable.

This report must of necessity be somewhat detailed, but this was necessary in order to properly estimate the approximate potential for FABRIKOID Division products in the various places where it is possible for passenger automobiles to use our materials. It must be remembered too that this report has limitations, especially since in numerous cases the potential estimated for a specific make of car was arrived at by using percentage figures common to the industry as a whole.

The fields chosen as forming a potential were:

1. Closed top materials.
2. Open top & side curtain materials
3. Inside curtain materials (shades)
4. Rumble Seats
5. Open Car Upholstery
6. Bindings & Welts
7. Interior Trim
8. Spring Covers
9. Tire Covers
10. Misc. uses

Open top and side curtain materials were combined because both use the same type of fabric. Inside curtain materials (shades) were included because at least three manufacturers use coated fabrics for this purpose, at present, and more might possibly be converted. As far as known only one car, Chevrolet, uses coated fabrics for open car upholstery, all the rest using genuine leather. Spring covers are furnished on only eleven makes of cars, and of these eight use a metal cover. Sales of additional covers as an accessory were not considered as this report takes into account only original equipment. Tire covers were included because, while they are not generally furnished as original equipment, most of the dealers buy tire covers either from the manufacturer or an authorized accessory house to furnish with every new car. Mr. Owens furnished us with an estimate of tire cover sales by manufacturers, and this was used instead of actual sales figures.

Tool Kit bags were not considered because generally they are made of cheap cloth, or of coated seconds or scrap. Windshield

-continued-

4007

Visors were not considered either, because at present all passenger cars use Metal Visors as an integral part of the car.

Inasmuch as production figures rather than sales are desirable in any study of potential yardage, production of cars by makes was secured from Cramis Monthly Report on automotive statistics. As these production figures included trucks (no separate figures being available) it was found that the only way to eliminate truck production was to deduct sales (registrations) of trucks from the production figures reported by Cramis to arrive at passenger car production.

It should be noted that potential figures are divided into

1. Where coated fabrics are now used.
2. Where coated fabrics could be used, but instead a product competing with coated fabrics, is being used at present, such as genuine leather for open car upholstery, metal for spring covers, and silk and poplin for closed car curtains. (Note that closed car upholstery was not considered as coated fabrics are not being used at present in this field.)

The basis on which potential yardage was developed is shown on separate sheets attached.

H. S. PLANK
SALES RECORD

WM. FULTON, JR.
DIVISION CONTROL MANAGER

MML/12-31-30

Note:

Page 6210 is on card 56.

Note:

Page 6211 is on card 132.

Defendant's Exhibit (DP) No. 283 DP 283

6212

EXCERPT

October 19, 1931

MR. WM. RICHTER
GENERAL MANAGER

FABRIKOID DIVISION
MONTHLY REPORT—SEPTEMBER, 1931

• • •

Sales and Items of Special Significance. Fisher Body have allocated requirements through November for top material for the new closed models; Fairfield being awarded requirements for Buick and La Salle and a portion of Cadillac; also about one-half of the Chevrolet business, which was held by us 100% last year. Material for Oakland, Pontiac, (which we previously enjoyed) and Oldsmobile, has been awarded to competition,—we believe to Textileather Company. We have received Chevrolet's business on open car requirements for the first six months 1932, which business is placed direct.

• • •

E

4011

Form 914 300M 4 31 Defendant's Exhibit (DP) No. 284

cc: Mr.J.J.Moosmann- Wilm.
" Mr. E.R.Cathcart- Ffld.
" Messrs.Malle & Brown
(in turn)- Wbg.

6213

June 13th, 1932.

Personal & Confidential

MR. C. A. STAPLES - DETROIT.

JUN 22 1932 O: W. W.

FORD - FISHER

I was very glad to learn from your letter of June 10th that this rather difficult situation had been so satisfactorily explained to Mr. Crusoe. We are immediately putting thru, effective June 10th, the necessary change in price on the 43" to 41-1/2 cents, less 2% for cash and 1% carload freight allowance.

Your letter states that you stated our May loss at Fairfield was $80 000, as indication of how desperate our top material situation is. Our May loss at Fairfield actually, of course, was only $36000, made up of an operating loss of $24 000 and loss on cotton futures of $12 000. The $80 000 that you had in your mind was for the Division. I mention this because there is a possibility that someone might question such a large loss for operations the size of Fairfield. Also, Jim Tomlinson has probably told you that we got an additional 15 000 yards from Ford late Friday, which makes the total 45 000 yards for this account at the new price.

In your current and future efforts to re-gain 100% of the Chevrolet business for us, it seems to me that the strongest argument we have in addition to the superior quality, favorable price, and our unequalled record of furnishing the automotive industry over thirteen million yards of material, practically without complaint, over the last few years, is the significance to the automobile manufacturer of having a fully responsible supply source. To drive this point home, we can, unfortunately, quote actual figures from our own experience of eight years ago. In the years of 1924-1925 and 1926, we actually reimbursed Fisher Body Corporation to the extent of $120 000 to cover the replacement and damage resulting from defective pyroxylin top material. The reason that this loss reached the size that it did, of course, was not the value of the top materials but the labor or replacement and the restoring of expensive upholstery, etc.

4012

To- Mr C.A.Staples (Ford-Fisher) June 13, 1932.

Figuring approximately 2 yards per car, it would certainly seem to me that you could draw up a very strong story of the unwarranted risk which an automobile manufacturer would be assuming in buying top materials from any but the most responsible and financially strong source of supply, particularly where the saving in purchasing from others at the outside would probably not exceed 4 or 5 cents per car. Specifically, I have in mind, of course, the J. C. Haartz Company, who took half of the Chevrolet business away from us last fall, despite the fact that at that time this company was literally on the auction block and has since been taken over on an optional management purchase basis, which leaves the future ownership and responsibility very much in doubt. To make the situation even more unsatisfactory, the Hunter Mfg. Company are in serious financial difficulties, having recently been taken over by a group of Southern cotton mills.

I realize that offsetting this, it can be argued that the Haartz material is apparently standing up satisfactorily, but as we know only too well, the manufacture of rubber products always involves substantial risks so far as ageing is concerned and even if it meant shutting down our plant we wouldn't consider taking the risks which Haartz are now incurring by stripping their technical organization, as we know they have done. They may get away with it, but if they don't, the future consequences would be very serious indeed to the automobile manufacturer using their top material.

I appreciate, of course, it would be unfair and improper to use any of the above information specifically, but generally, having the best interests of the General Motors Corporation in mind, it is something to which their purchasing people should certainly give very serious consideration.

E. S. NICKERSON.

ESN:me

Defendant's Exhibit (DP) No. 285

CC: E. S. NICKERSON

6215

April 18, 1938

G. W. SHERIN
FINISHES DIVISION
WILMINGTON

FABRIC TOPS

This acknowledges your letter of April 14th to Mr. Nickerson on the above subject.

The United States registration of passenger cars on December 31, 1937 was 25 400 000. We believe that figure represents about the number of passenger cars in use today, assuming that the cars that have been junked this year about equal the production.

The first steel tops were made toward the close of 1934. General Motors in 1935 supplied steel tops on the Chevrolet Master model, Oldsmobiles and Pontiacs and in 1936 all General Motors cars had steel decks. Ford and Chrysler began supplying steel decks with 1937 models.

We estimate that to date 5 950 000 closed passenger cars with steel decks have been sold and our figures of the passenger cars now in use are, therefore, as follows:

Closed cars with steel tops	-	5 950 000
Convertible type and open cars	-	2 000 000
Closed cars with fabric tops	-	17 450 000

A. L. BROWN

ALB:AJK

4014

E

[fol. 4015] DEFENDANT'S EXHIBIT (DP) No. 286

DON'T SAY IT—WRITE IT

DU PONT

Memorandum

Jan. 16, 1934.

To: H. S. Plank.
From: A. L. Brown.

Remarks: Would like to make a study of our sales of Teal by years, 1929 to date.
Please discuss with me.

AJK.

6218

Excerpts from Memorandum by H. S. Plank to A. L. Brown, 1934, entitled "Sales of Du Pont Teal - In Yards - By Customers 1929 to 1933 inclusive."

	Yards Sold				
	1929	1930	1931	1932	1933
Pierce Arrow Motor Car Co. Buffalo, New York	4,753	5,356	1,591	585	34
Ford Motor Co. Dearborn, Mich.		-	1,843	12,256	692
Briggs Mfg. Co. Detroit, Mich.	-	2,434	5,524	16,599	75
Chevrolet Motor Co. All locations	91,383	275,595	169,525	32,607	13,435
Chrysler Corp. Detroit, Mich.	36,194	18,672	23,366	30,111	8,326
Fisher Body Corp. All locations	23,478	26,608	25,864	10,481	706
Murray Corp. of America Detroit, Mich.	-	-	-	288	2,173
Packard Motor Car Co. Detroit, Mich.	66	63	88	11,595	279
Buick Motor Co. Flint, Mich.	14,232	-	3,226	1,988	-
Reo Motor Car Co. Lansing, Mich.			-	11	-
Seaman Body Corp'n Milwaukee, Wisc.	838	2,692	10,620	-	-
Hayes Body Co. Grand Rapids, Mich.	645	5,473	1,357	-	-
Willys Overland Co. Toledo, Ohio	2,011	2,087	2,965	-	-
H. H. Franklin Mfg. Co. Syracuse, N. Y.	-	15	-	-	-
E. G. Budd Mfg. Co. Detroit, Mich.	538	14,904	4,595	154	-

4016

Defendant's Exhibit (DP) No. 287

March 28, 1938

G. A. STAPLES - DETROIT

6219

FISHER BODY CORPORATION
"T E A L"

Thanks for your letter of March 23rd, which Mr. Nickerson has shown to me.

For your information, the question of guarantee was covered in correspondence in 1933 and, for your current record, I am quoting below the decision made.

The first part of your letter of August 14, 1933 to Mr. Nickerson reads as follows:

"Referring to your letter of August 8th, we give below the answers to your questions:-

"Question-1. Concerning guarantee we are asked to meet, it actually reads as follows:

'The rubber combining used is to be such that the combined material will withstand washing or cleaning with gasoline, naphtha or any other standard cleaning fluids which have no detrimental effect on Indanthrene colors, without causing combined fabrics to separate.

'Regardless of the number of times the material is cleaned or washed with gasoline, naphtha or any other standard fluids, or of the method used in washing or cleaning, the material is guaranteed against separation for two years."

This guarantee was authorized in Mr. Nickerson's letter of October 28, 1933, which is quoted below:

"Referring to Mr. Moosmann's letter to me of August 25th, of which you received a copy, it is Fairfield's belief- which we endorse- that as a result of careful study and test that the use of gasoline for cleaning Teal tops will not cause the fabrics to separate during the proposed two-year guarantee period. Therefore, this letter will constitute your authority to extend to Fisher Body the guarantee on our combined Teal exactly as quoted under question #1 in your letter of August 14th."

A. L. BROWN

ALB:AJK

4017

Defendant's Exhibit (DP) No. 288

CC: W. B. BURNS

6220

Newburgh, N. Y.
May 15, 1939

E. R. CATHCART

FISHER BODY CORPORATION

You have probably read Mr. Nalle's Trade Report of May 11th which indicates that for the first time in a number of years we have an opportunity to quote on Teal type material for Fisher.

Mr. Nalle's report outlines the specifications and also the two year guarantee that Fisher requires.

For your information, the guarantee is the same one that was considered by us in 1933, and at that time we agreed to give the guarantee to Fisher as the result of the conclusions of the New Products Committee covered in Mr. Schildhauer's memorandum of August 11, 1933.

MMcD

A. L. BROWN

4018

Defendant's Exhibit (DP) No. 289

CC: G. A. STAPLES

F. J. BRANNIGAN

6221

May 23, 1939

T. A. NALLE

FISHER BODY "TEAL"

Referring to your trade report of May 11, we are pleased to quote a price of $1.16, less 2%, f.o.b. Fairfield, on "Teal" fabrics (Black and Tan) as described in your trade report. (Should you have difficulty with this price, you are authorized to go to not less than $1.11.)

We are unable to make this a firm quotation until we receive samples of the fabric because we have not had this business in the past and, until we make a run, cannot determine whether or not the material fully meets the tests specified by Fisher, as some of these tests must necessarily be made on the finished material.

We have ordered sample rolls and will obtain these and make the tests as quickly as possible. We understand that these fabrics have been made by Nashua but they have declined to quote us, and the quotations that we have received are from Cannon.

Fisher specifications call for applying a water repellent treatment to the fabric after combining. Pond Lily recommend that the treatment be given to the individual fabrics rather than to the combined job, as they fear excess damage in giving the water repellent treatment as the final operation. We have, therefore, figured on water repellent treatment on each fabric separately.

We will be interested in having the reaction to the price and, in the meantime, we will obtain the fabrics and process them as promptly as we can.

A. L. BROWN

ALB:AJK

P.S. - F. J. Brannigan

Will you please secure samples of the Cannon fabrics as quickly as possible and make up a job to meet the Fisher specifications so that the Laboratory can check for tensile strength, shrinkage, fastness to light, etc.

A. L. Brown

4019

Defendant's Exhibit (DP) No. 290

Mr. ~~Verne Fisher~~, Fisher Body Detroit
~~Div.~~ General Motors Bldg., Detroit
A. L. Brown
W. Kaminsky

6222

June Seventeenth

1 9 4 0

Fisher Body Detroit Div.,
General Motors Corp.,
General Motors Bldg.,
Detroit, Michigan.

Attention: Mr. F. J. Walker.

Gentlemen:

We were recently favored with an inquiry from you on various top materials and are pleased to quote as follows on the combinations specified:

Fabric #4130	-	$1.30
" #4131	-	.49
" #4132	-	1.20
" #4133	-	.40

These prices are less 2% cash discount, f.o.b. Fairfield, Connecticut.

Immediately upon receipt of the inquiry sample rolls of cloth were ordered and we understand that it will require about 4 weeks for the cloth mills to deliver these. We believe it will be possible for the cloth manufacturer to meet tests, but we cannot state definitely regarding the 300 hour Fadeometer test until the samples can be manufactured and tested, which will, of course, require some time after the cloth is delivered to us. Delivery of these samples will be expedited all possible and at that time we can advise you definitely and at the same time submit samples for your consideration which have been tested in accordance with your specifications.

We appreciate your inquiry and trust that we will have the opportunity of supplying this type material.

Very truly yours,

E. I. du Pont de Nemours & Co. Inc.

By

"Fabrikoid" Division

TAW:S

E

4029

Defendant's Exhibit (DP) No. 291

FF-3310*

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

FABRICS & FINISHES DEPARTMENT

6223

Detroit 2, Michigan
January 20, 1947

MR. A. L. BROWN - NEWBURGH

FISHER BODY DIVISION

Bob Oliger has asked if I knew how long the current prices were good for. I told him that undoubtedly this point was purposely left open as you did not know how long it would be possible to maintain them. He is not in search of new quotations, of course. Nevertheless, they are working up requisitions for new orders which may not be ready for placing for several weeks. If it will be necessary to use new prices on these orders, you may want to look into the situation in advance. Unfortunately, no data are available as to what the volume will be in the various fabrics, but I am confident you can consider the current schedules as minimum.

I hope that you will have good luck on working up the "Teal" situtation for Fisher, and quickly. They are running extremely close and are as anxious as I have ever seen them on anything, for us to get going quickly on it. Vern Fisher and I were talking about it Saturday afternoon and he remarked that Jess Hildebrand, Assistant Director of Purchases, had told practically everyone in the corporation that du Pont were going to help them out on the convertible top situation.

T. A. NALLE

TAN:olb

4021

Defendant's Exhibit (DP) No. 292

CC: W. J. LYNCH
M. N. NISKOWITZ
A. F. SCHILDHAUER
E. H. CATHCART
H. D. MC LEAN

6224

Newburgh, New York
January 20, 1947

C. A. ALT

FISHER BODY DIVISION - CONVERTIBLE TOP MATERIAL

Mr. Fred J. Walker visited the New York Office on December 5th and urged us to place ourselves in a position to supply them with sport decking material and Mr. Niskowitz agreed that we would endeavor to do so. I note from your letter of December 17th that Mr. Niskowitz has requested you to work with the Purchasing Department on this problem. Hence, I am giving you the samples, specifications and other information. Mr. Jess Hildebrand, Assistant Director of Purchases of Fisher, contacted Mr. Walle the latter part of last week and expressed the hope that we would be in a position to quote by February 1st. Of course, it is extremely doubtful that this is possible but this is an indication of the urgency they attach to the problem. Mr. Hildebrand pointed out that the convertible program is scheduled to be greatly enlarged for the 1948 models and indicated that the figures that have been given to us for 1947 will be enlarged for 1948.

The Fisher sport decking is now being supplied by Harts, Mason, Brewer who will purchase the fabric from Nashua and Fisher wish a second source of supply because they do not want to be dependent upon Nashua alone. It is therefore evident that we should not approach Nashua on this problem.

I am attaching copy of Fisher Body specifications #12-T-1542, 13-T-1542 and 14-T-1542 and you will note that two fabrics are involved. The Tan facing fabric is to be Vat dyed in the piece and the Black facing material is to be dyed in a fast color. The backing fabric is the same for both combining jobs and is sulphur piece dyed.

The lining fabric which we do not coat, and which is part 14-T-1542, is the same fabric as the backing material but is to be bleached and sulphur dyed and receive an aridex treatment.

The quantity involved is 25 000 yards monthly of the surface fabric (½ in Black and ½ in Tan) and 35 000 yards of the drill backing of which 25 000 yards would be used to combine to the surface fabrics and 10 000 yards to be dyed and aridex treated for lining.

F177

4022

Defendant's Exhibit (DP) No. 293

CC: A. L. BROWN
C. A. ALT

6225

New York Office
January 24, 1947.

W. S. LYNCH - PURCHASING

CONVERTIBLE TOP MATERIAL

We acknowledge your letter of January 21st on the subject in reference.

We are anxious to cooperate with Fisher in meeting not only their current expanded needs for sport decking but also in working out new improved constructions for their future consumption. We are not unmindful of the fact that considerable effort was expended in the past without success in procuring satisfactory fabrics to meet Fisher's sport decking needs. Our renewed effort, however, comes as a result of a special plea from Fred Walker, Purchasing Agent for Fisher, and Vern Fisher, Body Trim Engineer for Fisher Body.

You have probably seen the recent publicity by General Motors on their convertible car pricing program. Mr. Walker told us about this some time ago and said that Fisher are forecasting considerable expansion in this type of automobile. Furthermore, they have not been too well pleased with Haarts, Mason, Grower's performance and would like us to at least share in that business.

Fairfield is ideally set up to produce materials of this type today and we plan an aggressive program to go after it. Our success, of course, will be dependent to an unusual extent on our ability to get the necessary fabrics. We realize that the development of suitable sources may take several months, although we are hopeful that we can get started sooner.

NW

M. N. NICKOWITZ

E

4023

Defendant's Exhibit (DP) No. 294

cc: M. N. Nickowitz - New York

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

FABRICS & FINISHES DEPARTMENT

Fairfield, Conn.
March 25, 1947

A. L. BROWN
NEWBURGH

TEAL AUTO TOPPING FOR FISHER

In compliance with your recent request, we have developed a suitable combining medium for producing a double texture teal construction for collapsible auto tops for Fisher Body. This is based on neoprene with which we get good adhesion to cotton and the durability will, of course, be very much superior to the old rubber used in pre-war days. Another feature of this combining would be its cleanability with gasoline as well as soap and water.

The experimental work has been done on some undyed drills we had in stock and only laboratory panels have been prepared. We also have some older work on both neoprene and butyl rubber on exposure for some time and the results will be available shortly. At present, we are waiting for the proper fabrics so that we can combine them and submit the finished product to Fisher Body for evaluation but according to recent correspondence, it appears that we will not have any properly dyed fabrics to work with in the very near future.

We are considering our part of this problem completed for the time being until fabrics can be obtained for preparation of a working sample for submission to Fisher Body.

A. F. SCHILDHAUER

AFS:mvk

4024

Defendant's Exhibit (DP) No. 295

CC: J. R. BUCKLEY
A. L. BROWN
T. A. MALLE
E. H. CATHCART
H. S. CLEMENS
W. S. LYNCH - PURCHASING

New York Office 6227
January 27, 1947.

OFFICE TRADE REPORT #2

FISHER BODY CORPORATION
DETROIT, MICHIGAN

Mr. Fred Walker of Fisher Body stopped in today to pay us a more or less routine visit but also to urge us to equip ourselves as soon as possible to supplement their supply of sport top fabrics.

Following a conversation with Mr. Lynch, which preceded Mr. Walker's visit, we explained to Mr. Walker that conditions in the textile industry would militate against early solution of this problem and that it might take us three to six months to get lined up on a source. He is hopeful that we can beat that time but urged us not to be discouraged if it took that long because they were determined to develop at least one more source as they are anticipating three to four times as much business in 1948 on convertible jobs as they now have.

Mr. Walker told us that Landers had equipped themselves before the war to supply this type of material in competition with Haartz-Mason-Grover and that they have asked them, too, to help them in this instance. However, they would like for Du Pont to at least share in this business and Mr. Walker believes that it should be attractive for the long pull.

We advised Mr. Walker that T. A. Malle would be in to see him regarding higher prices. He asked that we write him and explain the reasons for the higher prices. We told him that these were in part made up by higher castor oil prices, higher solvent prices, higher pigment prices, as well as increased cost of gray goods since our previous sales price was established. Mr. Brown will confirm the reasons for the price advance in a letter to Mr. Walker, in order that he may be able to present the facts to his principals.

Mr. Walker said that he had bought very substantial quantities of sheeting in Worth Street on Thursday, January 23rd, at prices approximately 20% above the October ceiling. He covered on these sheetings through June on the basis that he had to do it in order to insure delivery. Mr. Walker stated that they had been offered sheetings for the third quarter at the ceiling price but they are not purchasing, at least for the present, beyond the second quarter. Mr. Walker said that after he had negotiated for a large quantity of sheeting, an offer had come in to the Textile Office for 1¢ per yard more for the sheeting which he purchased.

KW

4425 M. H. NICKOWITZ

Defendant's Exhibit (DP) No. 296

CC: J. W. RICHARDSON
M. H. NICKOWITZ
G. T. VAALA

6228

Newburgh, N. Y
October 10, 1949

CONFIDENTIAL

R. C. WILLIAMS

FISHER BODY—"TEAL"

As you know, we did not plan to see Mr. Vern Fisher on the trip to Detroit last week. However, Dr. Vaala and I encountered him in The Coffee Shop and talked with him in the lobby after that for about half an hour. No mention was made of price nor your current discussion with him and the Purchasing Department.

Mr Fisher inquired about the run of rayon/cotton that we are making for him, and Dr. Vaala explained that this particular run would probably not provide any reliable information. It will be completed at Fairfield within a few days and shipment made. It was pointed out that we did not know what treatment the fabric had already received or what type of dye was used. Dr. Vaala is writing separately to Mr. Richardson giving his views on this experimental run. Mr. Fisher stated that their results on the rayon/cotton construction from the shrinkage standpoint are not at all uniform and he has serious misgivings concerning the continued use of this construction by them.

4026

After the rayon/cotton material that Fairfield is coating has been received and examined we should be advised whether or not we should look into the matter of a construction of that type. When the question was discussed with Mr. Walker in the spring he suggested that we probably should not attempt to line up a source of supply for the rayon/cotton fabric. He said that his present source was obtaining the construction from two concerns and that if a third were added he was afraid the amount of business would not be sufficient to keep any of them interested.

Mr. Fisher pointed out the large amount of time that he is spending on the top material problem and he mentioned that their present replacements are running at the rate of $250 000 a year. He said that if a top shrinks within one year they are replacing it if it is called to their attention.

He talked some about vinyl coated glass fabric made by Cordo Chemical Company, So. Norwalk, Conn. He said there was some thought that they should go to that construction which is non-shrinkable, but indicated that the chance of using it is very slight because of the manufacturing difficulties they would have. He did ask if we could duplicate it and was informed that we could do so from a technical standpoint but that we probably would recommend "ARMALON" coating as a better bet than vinyl; also that there was the question

of handling glass fabric in the plant which has some objections, and would have to be considered.

Mr. Fisher volunteered the information that our present construction is at the top of the list from the shrinkage

standpoint at present and he commented that possibly he should recommend to Purchasing that we be given all of the business. He followed this up by saying that it would not be a good thing to make such a recommendation. He then said that possibly we should be given the principal part of the business and should tell the competitor what we are doing to control the shrinkage within such narrow limits. Of course we ducked an answer to that one.

He mentioned that he had heard that Chrysler has had difficulty with Haartz material and has made a purchase from Goodall. He went on to say that he had tested Goodall material and found it unsatisfactory.

The above information was given to Mr. Richardson Friday evening but Mr. Nickowitz requested that I incorporate it in this letter to you.

A. L. BROWN

ALB:AF

NOTE: In upper left corner of first page appear the initials "JHW, ET, WJP," handwritten, with lines drawn through them. In upper right corner there are three stamps reading, "W.J.P. Oct 11 1949—E. D. Oct 11 1949 and Oct. 11 1949 J.H.W." Handwritten figures "111" underlined also appear here. The words "File Copy" are printed diagonally across both pages.

Defendant's Exhibit (DP) No. 297 (corrected)

E. I. DU PONT DE NEMOURS & COMPANY
DOLLAR SALES OF COATED AND COMBINED FABRICS TO FISHER BODY COMPANY—1923 TO 1949

Year	Newburgh Sales	Fairfield Sales	Total du Pont Sales	Units Manufactured[7]	Newburgh Sales Per Car Manufactured	Fairfield Sales Per Car Manufactured	Total du Pont Sales Per Car Manufactured
1923	117,286	0	117,286	268,934	.44	0	.44
1924	55,831	0	55,831	229,711	.24	0	.24
1925	100,865	202,308[1]	303,173	442,840	.23	.46	.69
1926	114,705	1,044,358	1,159,063	863,059	.13	1.21	1.34
1927	861,930	1,424,138	2,286,068	1,119,241	.77	1.27	2.04
1928	580,943	1,561,892	2,142,835	1,301,522	.45	1.20	1.65
1929	137,989	1,478,982	1,616,971	1,360,617	.10	1.09	1.19
1930	57,791	866,525	924,316	817,792	.07	1.06	1.13
1931	95,752	734,871	830,623	813,382	.12	.90	1.02
1932	73,038	176,434[2]	249,472	395,604	.18	.45	.63
1933	205,053	353,724	558,777	630,039	.33	.56	.89
1934	233,285	473,025	706,310	816,834	.29	.58	.87
1935	319,834	183,398[3]	503,232	1,220,341	.26	.15	.41
1936	242,136	3,981	246,117	1,505,890	.16	.00	.16
1937	367,501	1,755	369,256	1,524,841	.24	.00	.24
1938	135,350	28,213[4]	163,563	842,632	.16	.03	.19
1939	249,806	69,521	319,327	1,202,690	.21	.06	.27
1940	737,044[5]	78,884	815,928	1,691,226	.44	.05	.49
1941	1,161,035	60,430	1,221,465	1,780,057	.66	.03	.69
1942	23,223	0	23,223	85,897	.27	.00	.27
1943	0	0	0	0	—	—	—
1944	190	597	787	0	—	—	—
1945	143,989	600	144,589	27,832	5.17	.02	5.19
1946	972,942	105,496	1,078,438	805,867	1.21	.13	1.34
1947	2,169,921	186,387	2,356,308	1,407,119	1.54	.13	1.67
1948	2,311,950	311,929[6]	2,623,879	1,524,134	1.52	.20	1.72
1949	2,743,842	346,187	3,090,029	2,208,011	1.24	.16	1.40

[1]Fisher started buying from du Pont in September 1925.
[2]Fisher discontinued purchases of du Pont Teal, 1932.
[3]Fisher converted to steel tops during the years 1935 and 1936.
[4]Fisher started buying Cavalon for sedan delivery trucks.
[5]Fisher started using artificial leather for interior trim in 1940.
[6]Fisher resumed purchases of du Pont Teal, 1948.
[7]Figures represent closed bodies only 1923-1930, but represent all types of bodies, 1931-1949.

Sources: General Motors Corporation Production Records.
Du Pont Departmental Trade Records—Fabrics Division Sales Cards.

6097

6231

Defendant's Exhibit (DP) No. 298 (corrected)

E. I. DU PONT DE NEMOURS & COMPANY
YARDAGE SALES OF COATED AND COMBINED FABRICS TO FISHER BODY COMPANY—1923 TO 1949

Year	Newburgh Sales (Yards)	Fairfield Sales (Yards)	Total du Pont Sales (Yards)	Units Manufactured[7]	Newburgh Sales Per Car Manufactured (Yards)	Fairfield Sales Per Car Manufactured (Yards)	Total du Pont Sales Per Car Manufactured (Yards)
1923	80,514	0	80,514	268,934	.30	0	.30
1924	48,004	0	48,004	229,711	.21	0	.21
1925	173,833	182,529[1]	356,362	442,840	.39	.41	.80
1926	189,431	980,500	1,169,931	863,059	.22	1.14	1.36
1927	966,720	1,556,004	2,522,724	1,119,241	.86	1.39	2.25
1928	815,642	1,761,289	2,576,931	1,301,522	.63	1.35	1.98
1929	207,134	2,113,744	2,320,878	1,360,617	.15	1.55	1.70
1930	91,008	1,314,884	1,405,892	817,792	.11	1.61	1.72
1931	173,064	1,338,781	1,511,845	813,382	.21	1.65	1.86
1932	222,717	392,493[2]	615,210	395,604	.56	.99	1.55
1933	593,164	787,200	1,380,364	630,039	.94	1.25	2.19
1934	554,709	889,149	1,443,858	816,834	.68	1.09	1.77
1935	789,828	356,685[3]	1,146,513	1,220,341	.65	.29	.94
1936	898,690	9,111	907,801	1,505,890	.60	.01	.61
1937	882,362	5,218	887,580	1,524,841	.58	.00	.58
1938	310,559	42,427[4]	352,986	842,632	.37	.05	.42
1939	506,081	102,687	608,768	1,202,690	.42	.09	.51
1940	1,431,269[5]	108,606	1,539,875	1,691,226	.85	.06	.91
1941	2,108,735	82,333	2,191,068	1,780,057	1.18	.05	1.23
1942	30,964	0	30,964	85,897	.36	.00	.36
1943	0	0	0	0	—	—	—
1944	359	47	406	0	—	—	—
1945	205,131	102	205,233	27,832	7.37	.00	7.37
1946	1,131,364	79,641	1,211,005	805,867	1.40	.10	1.50
1947	1,851,270	127,932	1,979,202	1,407,119	1.32	.09	1.41
1948	1,820,216	181,433[6]	2,001,649	1,524,134	1.19	.12	1.31
1949	2,097,097	183,233	2,280,330	2,208,011	.95	.08	1.03

[1]Fisher started buying from du Pont in September, 1925.
[2]Fisher discontinued purchases of du Pont Teal, 1932.
[3]Fisher converted to steel tops during the years 1935 and 1936.
[4]Fisher started buying Cavalon for sedan delivery trucks.
[5]Fisher started using artificial leather for interior trim in 1940.
[6]Fisher resumed purchases of du Pont Teal, 1948.
[7]Figures represent closed bodies only 1923-1930, but represent all types of bodies, 1931-1949.

Sources: General Motors Corporation Production Records.
Du Pont Departmental Trade Records—Fabrics Division Sales Cards.

Defendant's Exhibit (DP) No. 299

62333

Excerpt from Report of the Fabrikoid Division to the Executive Committee for April 1928, dated May 26, 1928

"During the month we secured an initial order at Fairfield from Motor Bodies, Inc., a body builder, for 1,300 yards, and we also secured 15,000 yards from General Motors Truck Company, which formerly had gone to competition."

4031

CC: W. W. KAMINSKY

March 7, 1940

T. A. NALLE

GENERAL MOTORS TRUCK & COACH

For your information, we are attaching test cards showing results of tests on L. C. Chase, Olive Drab material, compared with "Cavalon". These cards were requested in your trade report No. 41.

The competitive product is fairly good but the superiority of "Cavalon" is readily indicated, particularly in the scrub test.

A. L. BROWN

ALB:AJK

NOTE: The handwritten figures "408" appear in the upper right-hand corner. The words "file copy" are stamped diagonally across the face of the page.

E

4033

Defendant's Exhibit (DP) No. 301

CC: A. L. BROWN

6235

Fairfield, Conn.
June 5, 1940
Dict. 6/4/40

T. A. HALLE

GENERAL MOTORS TRUCK & COACH

The attached samples showing results of Bomb Aging are supplementary to evaluation of U.S. Naugahyde Olive Drab material vs. "Cavalon" #7030 which we previously submitted to you. The U. S. Naugahyde failed after 14 days in the bomb whereas "Cavalon" #7030 #704 Color withstood 19 days.

WK:emf

W. W. KAMINSKY

4033

POTENTIAL EXISTING IN AUTOMOTIVE FIELD FOR USE OF PYROXYLIN OR RUBBER-COATED TEXTILES AS ORIGINAL EQUIPMENT

11 MONTHS - 1930

PASSENGER CARS ONLY	PASSENGER CARS PROD. 11 MOS. 1930	CLOSED TOP MATERIALS POTENTIAL	CLOSED TOP MATERIALS SALES N-OR-F	SPRING COVERS POTENTIAL	SPRING COVERS SALES F	OPEN CAR TOPS AND CURTAINS POTENTIAL	OPEN CAR TOPS AND CURTAINS SALES F	SHADE MATERIALS POTENTIAL	SHADE MATERIALS SALES N	RUMBLE SEATS POTENTIAL	RUMBLE SEATS SALES F	TIRE COVERS POTENTIAL	TIRE COVERS SALES N-OR-F	F... TIRES	TIRE COVERS POTENTIAL	TIRE COVERS SALES N-OR-F	OPEN-CAR UPHOLSTERY POTENTIAL	OPEN-CAR UPHOLSTERY SALES F	BINDING & WEB'S POTENTIAL	BINDING & WEB'S SALES F	INTERIOR TRIM POTENTIAL	INTERIOR TRIM SALES F	MISCELLANEOUS USES CURTAIN COVERS (BOW COVERINGS, ETC.) POTENTIAL	MISCELLANEOUS USES CURTAIN COVERS (BOW COVERINGS, ETC.) SALES N-OR-F	TOTAL POTENTIAL WHERE FABRIC IS NOW USED	TOTAL POTENTIAL WHERE FABRIC COULD BE USED	TOTAL SALES N	TOTAL SALES F
American Austin	10 519	24 980	F-9 935			8 260		•11 285		632		10 519		•	10 519		•3 480		10 519		5 259		5 259		65 428	14 765		9 935
Auburn-Cord	13 655	32 385				10 700		•14 620		820		13 655		•	13 655		•4 510		13 655		6 828		6 828		84 871	19 130		
Buick	114 991	272 400	F-211 130			90 130		•123 000		6 900	35 503	114 991	N-60 000	•03	114 991	N-60 000	•38 000		114 991		57 495	73 571	57 495		714 402	161 000	169 074	211 130
Cadillac-LaSalle	21 801	51 640	(F-36 640 (N- 7 634	•21 801		17 100	14 028	•23 325		1 310		21 801	F- 3 000	•	21 801	F- 3 000	•7 200		21 801		10 900	1 931	10 900	F-13 976	135 452	52 326	9 565	67 644
Chevrolet (1)	679 000	1 610 000	F-783 179			533 000	265 006	•727 000		95 000		679 000	(F- 7 500 (N-35 000	2	679 000	(F- 7 500 (N-35 000	224 000	225 900	679 000		339 500		339 500	(F-23 794 (N-10 780	4 499 000	727 000	271 680	1 079 479
Chrysler	63 187	150 000		•6 318		49 600	45 614	•67 650		3 800		63 187		•2	63 187		•20 850		63 187		31 593		31 593	F - 866	392 960	94 818		46 480
DeSoto	36 145	85 600				28 400		•38 650		2 170		36 145		•1	36 145		•11 920		36 145		18 073		18 073		224 606	50 570		
Dodge (1)	72 000	170 750				56 500		77 100		4 320		72 000		•2	72 000		•23 775		72 000		36 000		36 000		524 670	23 775		
Durant	26 000	61 650				20 400	7 011	•27 850		1 560		26 000		•	26 000		•8 575		26 000		13 000		13 000	F-1 285	161 610	36 425		8 296
Ford (1)	1 240 000	2 940 000	F-1 467 014			972 500		•1 330 000		173 800		1 240 000	N-24 956	•40	1 240 000	N-24 956	•409 500		1 240 000		620 000		620 000		7 806 300	1 739 500	24 956	1 467 014
Franklin	7 194	17 080				5 650		•7 700		430		7 194	N- 1 000	•	7 194	N- 1 000	•2 375		7 194		3 597		3 597		44 742	10 075	1 000	
Gardner	3 062	7 260				2 405		•3 280		184		3 062		•	3 062		•1 010		3 062		1 531		1 531		19 035	4 290		
Graham-Paige (1)	1 200	2 850		•1 200		940		1 285		72		1 200			1 200		•397		1 200		600		600		8 747	1 597		
Hudson-Essex	103 280	244 500				81 100		110 600		6 200		103 280		•	103 280		•34 100		103 280		51 640		51 640		752 240	34 100		
Hupmobile	22 809	54 040		22 809		17 900		•24 400		1 370		22 809		•	22 809		•7 540		22 809		11 405		11 405		164 547	31 940		
Jordan	1 634	3 875				1 280	30	•1 750		98		1 634			1 634		•540		1 634		817		817		10 155	2 290		30
Lincoln	4 445	10 530				3 490		•4 760		267		4 445		•	4 445		•1 470		4 445		2 223		2 223		27 623	6 230		
Marmon	13 298	31 500	(F-2 895 (N- 364	4 000		10 430	4 721	•14 225		800		13 298	(F- 856 (N-15 000		13 298	(F- 856 (N-15 000	•4 390		13 298		6 649		6 649	F-1 244	86 624	18 615	15 364	9 716
Moon-Ruxton	2 530	6 000				1 985		•2 710		152		2 530			2 530		•835		2 530		1 265		1 265		15 727	3 545		
Nash	61 503	145 900		•9 000		48 300	12 242	•65 900		3 695		61 503		•1	61 503		•20 300		61 503	2 108	30 751		30 751	F-2 547	382 403	95 200	2 108	14 789
Oakland-Pontiac	77 527	183 900	F-62 046	77 527	31 552	60 800		•83 000		4 650	2 500	77 527	N-8 000	•1 00	77 527	N-8 000	•25 600		77 527		38 764	10 876	38 764		559 459	108 600	52 928	62 046
Oldsmobile-Viking	49 283	117 000				38 650	10 681	•52 800		2 960	6 000	49 283		•1 00	49 283		•16 280		49 283		24 641	12 231	24 641	F-6 097	306 458	69 080	18 231	16 778
Packard	29 750	70 500				23 340	63	•31 850		1 785		29 750	F-7 500	•	29 750	F-7 500	•9 820		29 750		14 875		14 875		184 875	41 670		7 563
Peerless	5 690	13 500		•5 690		4 470		•6 095		342		5 690		•	5 690		•1 880		5 690		2 845		2 845		35 382	13 665		
Pierce-Arrow	7 164	17 000	N-6 911	•7 164		5 625	9 284	•7 680		430		7 164	F-1 548	•	7 164	F-1 548	•2 365		7 164		3 582	156	3 582	F - 875	44 547	17 209	7 067	11 707
Plymouth	71 327	169 000				56 000		•76 400		4 285		71 327		•1	71 327		•23 525		71 327		35 613		35 613		443 165	99 925		
Reo (1)	13 600	32 250	F-5 400	•13 600		10 680		•14 550		815		13 600		•	13 600		•4 485		13 600		6 800		6 800		84 545	32 635		5 400
Studebaker-Erskine(1)	57 200	135 800	F-18 367	•5 700		44 900		•61 300		3 440		57 200	N-1 000	•1	57 200	N-1 000	•18 900		57 200		23 600		23 600		345 740	85 900	1 000	18 367
Willys-Overland (1)	82 000	194 500				64 350	2 272	•87 900		4 920		82 000		•1	82 000		•27 100		82 000		41 000		41 000		509 770	115 000		2 272
Misc. Manufacturer Sales					13 500															32 333							45 833	
Fairfield Sales Total			2 596 606				370 952						20 404			20 404								50 684				
Newburgh Sales Total			14 909		45 052						44 003		144 956	03		144 956		225 900		34 441		98 765		10 780				
TOTAL	2 891 794	6 856 390	2 611 515	174 809	45 052	2 268 885	370 952	3 098 665		327 207	44 003	2 891 794	165 360	95 03	2 891 794	165 360	954 722	225 900	2 891 794	34 441	1 440 846	98 765	1 440 846	61 464	18 635 083	3 710 875	618 806	3 038 646

All Potential as well as Sales are shown in lineal yards.

(1) Estimated Truck Prod. deducted from Total Sales to get Passenger Car Sales.

•Indicates that make of car does not use a Coated Fabric but uses a product which competes with Coated Fabrics for Standard Use in that field.

"N" or "F" indicates whether Sales are Newburgh or Fairfield Material.

rds.

t Passenger Car Sales.

ic but uses a product in that field.

rfield Material.

H.S.PLANK/CAT-10
SALES RECORD
12-31-30

Defendant's Exhibit (DP) No. 302

6236

4034

"FABRIKOID" AND RUBBER TRADE REPORT - Sales Manager's Copy

COPIES TO: 2 Fairfield

[redacted] Date of Call 11/19/40

[redacted] Brook & Coogh

B. C. 23

Class 1

Rep't No. 340

Salesman [redacted]

Date of Call 11/19/40

What products are made from our Rubber or Pyroxylin materials?

Suggest New Uses:

Show Affiliations and Other Locations

CONSUMPTION - PYROXYLIN COATED GOODS - NEXT TWELVE MONTHS

LIGHT (Inclusive: Sheetings - Close Coatings - Coated Paper)

Quality	Width	Price	Manufacturer	Bought From or Supplied By	Approx. Normal Annual Cons.-Yds.

HEAVY (Inclusive: Drills - Twills - Sateens - Materials)

Quality	Width	Price	Manufacturer	Bought From or Supplied By	Approx. Normal Annual Cons. Yds.

CONSUMPTION - RUBBER COATED GOODS - NEXT TWELVE MONTHS

CONSUMPTION - OTHER FABRICS, COMPETITIVE IN USE, - NEXT TWELVE MONTHS

1. [redacted] Specific reasons for purchase - any new competitive [redacted] products bought since last call? Did you inform yourself?

2. [redacted] Favorable comments, criticisms or complaints of our prices, [redacted] products.

3. ECONOMIC OUTLOOK: Customer's outlook on business next three months.
   a-Present capacity operating, at this call.
   b-Any new, reopened, or lost business to report, since last call? Give specific reasons for change and tell competitors affected.

4. What assistance can organization give you prior to next call?

5. Report change in firm name, address, purchasing agent, class, mailing list.

GENERAL: Each report should show continuity of effort from last visit, as well as purpose, results and needed action of call.

Answer completely each call questions 1, 2, and 3 - General remarks to follow - Separately for Newburgh and Fairfield Products.

[redacted]

alled with Mr. Brown and saw E.H.Nelson. He is interested in extending current "Cavalon" contracts that expire last and is anxious that the same price be continued. Mr. Brown agreed to take this up upon his return and advise. (In the meantime instructions have been received from him to extend the contract.)

he question of olive drab was also discussed and elson indicated that they had released so far this ear approximately 70,000 yards of olive drab which e now coming from U. S. Rubber. He further stated hat U. S. had agreed at the time of takin the contract to protect them on add tional government busi ess. This means that they will not be in the market s of January 1st for a new contract on this item and

we will be fortunate to secur [illegible] t l business.

USE OTHER SIDE FOR WRITING OR TYPING ADDITIONAL REMARKS
(Do Not Write At Top)

Form 2007[illegible] (30) made 1926

Parlin Trade Record

INDUSTRIAL SALES TRADE REPORT
E.I. DU PONT DE NEMOURS & COMPANY
Chemical Products Division

Salesman John L. O'Donnell Date 5-[illegible]-26 Report No. 720

Customer Zelco Lift Co. Class No. 1.

Street and No. [illegible] Business Producers

Town [illegible]ston State Ohio

Person Interviewed [illegible] Title Buyer [illegible] Title

BRANDS (Check out goods not handled)	IMMEDIATE PRIOR PURCHASES: QUANTITY	GRADE	PRICE	FROM WHOM	CONTRACT EXPIRES	APPROXIMATE CONSUMPTION PER MONTH	OUR SHARE
SOLVENTS	Re. letter a. m. m. [illegible] 41.						
COTTON SOLUTIONS							
LACQUERS	Plant working personnel--for the present						
THINNERS	have accepted check shipments done by any						
BRONZING LIQUIDS	of option for [illegible] accepted our						
F X ENAMEL	first is made [illegible] to [illegible]						
BRONZE POWDER	tisfactory, whereas any [illegible]						
READY MIXED PAINTS	9209 our test [illegible]						
VARNISHES	soon as they can get on the [illegible]						
PASTE PAINTS	ial is [illegible]						
OIL ENAMELS	xious to [illegible]						
PASTE FILLERS	3x10 Flintflex Lok [illegible]						
STAINS	product is very satisfactor[illegible]						
BLACK JAPANS (Black Enamels)	this--have sent us their [illegible]						
WHITE LEAD (in Oil)	gal.						
PRIMERS & UNDERCOATERS	Send P. L. these [illegible]						
	center.						

6285

1. Give important reasons why customer or prospect buys from competitors (quality, service and price).
2. (a) Are you familiar with and have you given due consideration to EVERY PRODUCT customer or prospect buys?
   (b) What products should we concentrate on to initiate sales with least delay?
3. Is customer or prospect operating at full capacity? If not, give approximate percentage.

EVERY QUESTION MUST BE ANSWERED, GIVING IMPORTANT DETAILS

Rec'd and Typed 5-21-26 A-O

Re. letter a. m. April 10th.

The other day when Mr. Durham and I were working at [illegible], I went into the matter of shipments of [illegible] received broken and found that [illegible] are having some trouble. They find broken [illegible] shipments are received by express, Frt. [illegible] is delivered them by [illegible] and I took this up with their re- [illegible] on the previous day. [illegible] they found two broken cans [illegible] that you write back to Parlin, [illegible] confirm my report that the [illegible] receiving cans broken in boxes that [illegible] feel that the cans are not made of [illegible].

Re. letter a. m. April 8th.

[illegible] of K putty dropped last December was [illegible] for touch up work at Lorraine City. As this material was never supplied, we are to consider this matter closed for the present. However, this has nothing to do with the material required for repairing scratches as referred to in my letter of April 26th. They are still looking for a white Duco that they can supply in small cans to their service depts. all over the country where it is necessary to repair cabinets that have become scratched or marred.

Defendant's Exhibit (DP) No. 338

6288

ESTIMATED ANNUAL REQUIREMENTS OF GENERAL MOTORS DIVISIONS AND OTHER AUTOMOBILE MANUFACTURERS OF CASE-HARDENING AND HEAT TREATING MATERIALS SOLD BY DU PONT AND OTHER COMPANIES, RESPECTIVELY, SELECTED FROM GENERAL SURVEY OF ALL USERS OF SUCH PRODUCTS BY R. B. K'BURG IN SEPTEMBER 1937.

	Du Pont Products Pounds						Competing Products Pounds								
Customer	96-98% Sodium Cyanide	75% Sodium Cyanide	45% Sodium Cyanide	30% Sodium Cyanide	Ducase	Total	Imported Sodium Cyanide	Aerocase	Perliton	Holden	Parkcase	Total	Grand Total	% du Pont	% Competing
Cadillac Motor Car	—	—	—	—	—	—	15 000	—	15 000	—	—	30 000	30 000	0	100.00
Chevrolet Gear & Axle	5 000	—	—	—	—	5 000	—	—	100 000	—	—	100 000	105 000	4.76	95.24
Chevrolet Bay City	—	100 000	—	—	—	100 000	—	—	—	5 000	—	5 000	105 000	95.24	4.76
AC Spark Plug	15 000	—	—	—	—	15 000	4 000	—	—	—	—	4 000	19 000	78.95	21.05
Buick	—	—	—	—	—	—	10 000	—	—	300 000	20 000	330 000	330 000	0	100.00
Olds Motor Works	—	—	—	—	—	—	25 000	—	—	—	—	25 000	25 000	0	100.00
General Motors Truck	2 000	—	—	—	—	2 000	—	5 000	—	—	—	5 000	7 000	28.57	71.43
Pontiac Motor	60 000	—	—	—	—	60 000	—	—	—	—	—	—	60 000	100.00	0
Chevrolet Parts Mfg.	—	—	300 000	—	—	300 000	20 000	—	—	10 000	—	30 000	330 000	90.91	9.09
Saginaw Steering Gear	—	—	—	—	—	—	—	—	—	—	25 000	25 000	25 000	0	100.00
Total General Motors Corp.	82 000	100 000	300 000	—	—	482 000	74 000	5 000	115 000	315 000	45 000	554 000	1 036 000	46.53	53.47
Chrysler Corp.	25 000	200 000	—	—	—	225 000	1 000	—	—	—	—	1 000	226 000	99.56	0.44
Detroit Gear & Mach. Division (B.W.Corp.)	50 000	—	—	—	—	50 000	—	—	—	20 000	—	20 000	70 000	71.43	28.57
Ford Motor Company	50 000	850 000	450 000	—	—	1 350 000	—	20 000	100 000	—	—	120 000	1 470 000	91.84	8.16
Hudson Motor Car Company	120 000	—	—	—	—	120 000	—	15 000	100 000	—	—	115 000	235 000	51.06	48.94
Long Mfg. Div., Borg-Warner	25 000	12 000	—	—	—	37 000	—	—	—	—	—	—	37 000	100.00	0
Motor Products Corp.	500	—	—	—	—	500	—	—	—	—	—	—	500	100.00	0
Packard Motor Car Co.	3 000	—	—	—	—	3 000	—	—	—	—	—	—	3 000	100.00	0
Motor Wheel Corp.	1 000	—	—	—	—	1 000	—	—	—	—	—	—	1 000	100.00	0
Reo Motor Car Co.	1 000	—	—	—	—	1 000	—	—	—	—	—	—	1 000	100.00	0
Continental Motors Corp.	2 000	25 000	—	—	—	27 000	—	—	—	—	—	—	27 000	100.00	0
Muskegon Motor Specialty Corp.	18 000	—	—	—	—	18 000	2 000	—	—	—	—	2 000	20 000	90.00	10.00
Studebaker Corp.	10 000	—	—	—	—	10 000	—	—	—	—	—	—	10 000	100.00	0
Four Wheel Drive Auto Co.	—	—	2 500	—	—	2 500	—	—	—	—	—	—	2 500	100.00	0
Nash-Kelvinator Corp., Nash Division	4 500	45 000	15 000	—	—	64 500	—	—	5 000	—	—	5 000	69 500	92.81	7.19
Total Other Automobile Manufacturers	310 000	1 132 000	467 500	—	—	1 909 500	3 000	35 000	205 000	20 000	—	263 000	2 172 500	87.89	12.11

Defendant's Exhibit (DP) No. 363

CASEHARDENING AND HEAT TREATING

Du Pont's Participation in Supplying Requirements of General Motors Divisions

	1930-1937	1938-1941	1946	1947	1948	1949	1950
CADILLAC	Buying 75% cyanide mixture from R&H prior to acquisition -- switched to competitive products about 1935.	Using competitive materials exclusively.	Using competitive materials exclusively.	Commenced using some duP materials for minor part of casehardening.	Liquid hardening baths largely displaced by gas process.	Using gas process for bulk of casehardening -- duP and competitive materials used for small quantity of liquid hardening.	
BUICK	Buying imported cyanide -- commenced using Aerocase in early '30s, later switched to Holden materials -- commenced displacement of liquid hardening with gas process in 1936.	Switched to duP cyanide in 1940 when imports cut off by war -- using gas carburizing for majority of operations.	Using duP cyanide & duP and Park carburizing salt -- using gas process extensively.	Used some imported cyanide but found it unsatisfactory -- rejected duP's carburizing salt in favor of Houghton Perliton.	Further expanded use of gas process.	Majority of heat treating done with gas process -- materials for liquid baths obtained from duP, Park and Houghton.	
CHEVROLET	Buying part of sodium cyanide from R&H prior to acquisition -- some plants using duP materials, others using Houghton, Holden & Park materials.	Special mixture prepared by duP for Chevrolet Gear & Axle, rejected by many other Chevrolet plants.	Liquid baths partially displaced by gas process -- duP supplying part of materials for remaining liquid baths.	Further displacement of liquid baths by gas process.		Liquid hardening used only for tools and emergency work -- duP supplying cyanide, competitors supplying majority of carburizing salts and special mixtures.	
OLDSMOBILE	Used no duP casehardening materials before 1937 -- used imported cyanide mixture for limited casehardening operations.	Major part of casehardening done with gas process -- using some duP 96% cyanide -- all other materials obtained from competitors.	Usage of gas process reduced slightly -- using some duP cyanide and heat treating salts.	Additional gas hardening equipment installed -- liquid baths used only for treating tools and miscellaneous small parts, using competitive materials in these baths exclusively.			
PONTIAC	Buying 45% cyanide mixture from R&H prior to acquisition & thereafter -- also using Park Kwickcase and imported 96% cyanide. Later used duP 96% cyanide.	Using gas, salt and cyanide -- duP supplying part of cyanide, no other materials.	Continuing to operate several liquid baths -- all materials except 96% cyanide supplied by competitors.		Use of gas hardening expanded -- still operating some liquid baths, purchasing 96% cyanide from duP, all other materials from competitors.		
GM TRUCK & COACH	Using small quantities of duP 96% cyanide and Aerocase for limited casehardening operations.	Using competitive materials almost exclusively.	Gas process used for part of operations -- materials for liquid hardening baths purchased by GM specification number on competitive bidding basis. DuP supplying minor part of requirements.				
TERNSTEDT	Using only straight cyanide, purchased entirely from importers.	Using some proprietary casehardening and heat treating mixtures, purchased entirely from duP competitors.	Using gas process for part of operations -- purchasing materials for liquid baths from competitors.	Using duP cyanide for part of operations, but liquid baths largely displaced by gas carburizing.			
A.C. SPARK PLUG	Casehardening and heat treating operations not extensive -- duP supplying part of materials.	Operations considerably expanded -- using some duP and some foreign cyanide -- bulk of work done with competitive materials.	Gas process used almost exlusively for casehardening -- liquid baths used for heat treating with materials purchased by Division specification number -- duP supplying minor part of requirements.				
BROWN-LIPE-CHAPIN	Buying cyanide from R&H prior to acquisition and from duP thereafter, used as reheating bath for pack hardening -- competitive materials used for majority of casehardening.	No casehardening or heat treating operations at this Division since 1936, when such operations were transferred to Saginaw Steering Gear.					
SAGINAW STEERING GEAR	Using 96% cyanide for casehardening, purchased from duP and importers in some years -- other materials for liquid baths supplied by competitors -- using gas carburizing since early '30s.	Continuing to use both liquid baths and gas carburizing -- materials for liquid baths, except small amounts of duP 96% cyanide, obtained almost exclusively from competitors.					
FRIGIDAIRE	Buying straight cyanide and mixtures from R&H prior to acquisition -- using imported cyanide and other competitive materials for majority of operations thereafter.	Using duP cyanide & carburizing salts -- part of requirements supplied by competitors.	Purchasing carburizing salts from competitors -- duP supplying some heat treating compounds and small quantities of cyanide.				
DELCO-REMY	Buying R&H material exclusively prior to acquisition -- thereafter major part of materials supplied by duP.	Purchasing materials on competitive bids -- duP supplying bulk of cyanide and neutral salt.	Purchasing only cyanide from duP, other materials from competitors -- gas process used to increasing extent.				
DELCO PRODUCTS	Purchasing limited requirements of casehardening materials from R&H prior to acquisition and from duP thereafter.	Liquid carburizing substantially increased -- majority of materials purchased from duP's competitors.	Using duP materials for bulk of casehardening -- buying heat treating materials on competitive bids, duP obtaining minor share of business.	Using competitive materials exclusively for casehardening -- duP supplying part of heat treating materials on competitive bidding basis -- gas carburizing used to increasing extent.			

Identification of Major Competitive Suppliers and Products

Supplier		Products
American Cyanamid Company	-	Aerocase
A. F. Holden Co.	-	Hard Case

E

Note:

Page 6236 is on card 132.

Defendant's Exhibit (DP) No. 303

CC: G. A. STAPLES

F. J. BRANNIGAN

E. R. CATHCART

November 20, 1940

6237

T. A. HALLE

GENERAL MOTORS TRUCK CORP.

Referring to our conversation with Mr. Nelson, it is satisfactory to extend the present "Cavalon" contract at the present price to the end of July next. Will you please let me know as soon as you have his final O.K.

With the quantity of Olive Drab material that they are now using, this running neck-and-neck with "Cavalon" I hope you will be able to prevail on him to give us a carload or two of it. We can do so and still buy a good quantity from competition since he seems insistent on continuing an outside source of supply.

A. L. BROWN

ALB:AKT

P.S. - E. R. Cathcart

This confirms conversation today. I estimate that 60 000 yards of "Cavalon" will be required by G.M.T. during the contract period in the first half of 1941.

A.L.B.

4035

NOTE: "File Copy" appears diagonally across the letter.

Defendant's Exhibit (DP) No. 304

6238

—1—

CC: E. R. Cathcart
A. L. Brown
W. W. Kaminsky

Fairfield, Conn.
December 20, 1940

F. J. BRANNIGAN:

GENERAL MOTORS TRUCK
PONTIAC, MICHIGAN

In your letter of December 3 you asked that we prepare for Mr. Nalle some comparative tests to show the comparison of our olive drab "Cavalon" with Naugahyde #720 of which we have recently received some samples in various letters from Mr. Nalle.

We have made a comparison of this Naugahyde with our #7030 quality and our #6028 quality. The test cards are attached and we are commenting as follows:

1. *Abrasion Resistance.* All samples, as will be noted, show no sign of wear at the end of the usual 10,000 cycle test.
2. *Edgewear.* As will be noted, both "Cavalon" constructions show no sign of wear at the end of 50,000 strokes whereas the Naugahyde shows definite signs of wearing.
3. *Scrub Resistance.* All three samples show excellent resistance to scrub at 2,000 strokes which is a rather severe test.
4. *Adhesion of the Rubber to the Fabric.* In this case the #7030 quality and Naugahyde are equal, both

4036

being built on a broken twill. The #6028 quality on the sateen is considerably better.

5. *Flexing.* In the DeMattia flex test all three samples show slight cracking at the corners, but no cracking across the face. In the Bodine flexing test no affect is noted on any of the samples at the end of the 24 hours—100,000 cycle test.

6. *Fade-O-Meter.* Whereas we do not like to mention Fade-O-Meter tests in our discussions with the trade or technical groups because we feel it has no particular bearing on the life of "Cavalon," nevertheless, we do make them for our own information to know how we stand in case this matter is brought up by such people who believe that this test has value, such as Chrysler and Ford. We are attaching the cards showing the greater amount of discoloration of the Naugahyde to our #7030 or #6028 qualities. We would

—2—

suggest that this information be kept for our own use only and not given to the trade, as we do not wish to be quoted as believing that the Fade-O-Meter is significant for we have been fighting it in Federal Specifications very strenuously during the past year.

In general we would say this group of tests indicates that the Naugahyde material is of fairly good quality. There is one weakness in comparison to "Cavalon" and that is on edgewear. Of course, we feel that this is an important weakness.

We do not have bomb aging tests completed although at this writing the Naugahyde has failed at the end of ten days. Our own material is not expected to fail until about

twenty days or more have elapsed—that has been our general performance. Whereas ten days is considered adequate by many of our competitors, we cannot agree with them based on our experience over ten years of correlation between bomb aging and actual service life and we therefore build that extra quality into our products to remove the question of deterioration from aging entirely.

A. F. SCHILDHAUER

AFS:neo

NOTE: In the second to last line on page 2 the word "actual" has been lined out and the word "extra" substituted in handwriting.

Defendant's Exhibit (DP) No. 305

E. I. DU PONT DE NEMOURS AND COMPANY DOLLAR SALES OF COATED FABRICS TO YELLOW TRUCK & COACH CO.—1927 TO 1943 INCLUSIVE

Year	Newburgh Sales	Fairfield Sales	Total du Pont Sales
1927	28,447	NA	NA
1928	55,465	26,124	81,589
1929	40,147	13,331	53,478
1930	89,862	9,906	99,768
1931	15,416	9,291	24,707
1932	7,644	985	8,629
1933	37,736	4,364	42,100
1934	27,905	118	28,023
1935	24,892	210	25,102
1936	39,467	17,132	56,599
1937	57,385	22,542	79,927
1938	1,776	37,572	39,348
1939	819	90,943	91,762
1940	1,556	80,168	81,724
1941	1,092	97,164	98,256
1942	1,901	2,162	4,063
1943	3,098	0	3,098

Source: Du Pont Departmental Trade Records—Fabrics Division Sales Cards.

6307

6211

Defendant's Exhibit (DP) No. 306

E. I. DU PONT DE NEMOURS AND COMPANY YARDAGE SALES OF COATED FABRICS TO YELLOW TRUCK & COACH CO., 1927 TO 1943

Year	Newburgh Sales (Yards)	Fairfield Sales (Yards)	Total du Pont Sales (Yards)
1927	21,889	NA	NA
1928	63,170	34,609	97,779
1929	46,517	12,858	59,375
1930	101,553	11,892	113,445
1931	24,875	13,049	37,924
1932	10,608	1,840	12,448
1933	53,284	7,309	60,593
1934	37,703	134	37,837
1935	32,661	242	32,903
1936	61,510	24,420	85,930
1937	87,919	32,202	120,121
1938	1,933	52,506	54,439
1939	1,106	128,234	129,340
1940	2,017	104,474	106,491
1941	1,299	120,965	122,264
1942	2,001	2,214	4,215
1943	2,834	0	2,834

Sources: Du Pont Departmental Trade Records—Fabrics Division Sales Cards

Defendant's Exhibit (DP) No. 307

E. I. DU PONT DE NEMOURS AND COMPANY
DOLLAR SALES OF COATED FABRICS TO GENERAL MOTORS TRUCK & COACH DIVISION, 1944 TO 1950

Year	Newburgh Sales	Fairfield Sales	Total du Pont Sales	Truck Production	Newburgh Sales Per Car Manufactured	Fairfield Sales Per Car Manufactured	Total du Pont Sales Per Car Manufactured
1944	8,120	28,590	36,710	152,528	.05	.19	.24
1945	10,547	70,693	81,240	115,279	.09	.61	.70
1946	10,435	85,238	95,673	36,393	.29	2.34	2.63[1]
1947	25,834	110,567	136,401	65,895	.39	1.68	2.07
1948	14,366	135,003	149,369	97,306	.15	1.39	1.54
1949	2,382	153,927	156,309	86,677	.03	1.78	1.81
1950	4,248	121,767	126,015	112,557	.04	1.08	1.12

[1]Coated fabrics in short supply and GMT&C bought all du Pont would supply.

Sources: General Motors Corporation Production Records.
Du Pont Departmental Trade Records—Fabrics Division Sales Cards.

1705

6243

Defendant's Exhibit (DP) No. 308

E. I. DU PONT DE NEMOURS AND COMPANY
YARDAGE SALES OF COATED FABRICS TO
GENERAL MOTORS TRUCK & COACH DIVISION, 1944 TO 1950

Year	Newburgh Sales (Yards)	Fairfield Sales (Yards)	Total du Pont Sales (Yards)	Truck Production	Newburgh Sales Per Car Manufactured (Yards)	Fairfield Sales Per Car Manufactured (Yards)	Total du Pont Sales Per Car Manufactured (Yards)
1944	8,540	26,437	34,977	152,528	.06	.17	.23
1945	10,697	66,100	76,797	115,279	.09	.57	.66
1946	10,310	55,226	65,536	36,393	.28	1.52	1.80[1]
1947	18,462	71,605	90,067	65,895	.28	1.09	1.37
1948	9,735	86,858	96,593	97,306	.10	.89	.99
1949	1,836	106,505	108,341	86,677	.02	1.23	1.25
1950	2,853	89,159	92,012	112,557	.03	.79	.82

[1]Coated fabrics in short supply and GMT&C bought all du Pont would supply.

Sources: General Motors Corporation Production Records
Du Pont Departmental Trade Records—Fabrics Division Sales Cards

23045

6244

Defendant's Exhibit (DP) No. 309

6245

CC: A. L. Brown
M. N. Nickowitz
T. A. Nalle
F. J. Brannigan

Fairfield, Conn.
September 25, 1940
(Dic. 9/23/40)

E. R. Cathcart
A. F. Schildhauer

CHEVROLET-COMMERCIAL BODY
Holly & Henry Streets
Indianapolis, Indiana

We quote below Mr. T. A. Nalle's Trade Report #275 covering his recent visit with Chevrolet-Commercial Body and attach samples of competitive materials referred to therein, namely, U. S. Rubber Company's "Naugahyde" to duplicate the "Cavalon" #6130 Brown #215-219 we are currently supplying, and Chase's Broken Twill construction in Olive Drab color, as well as the same type of material representing Cotan's manufacture known as "Cohyde."

"Refer to Trade Report #121 and note changes in consumption figures.

"Persons interviewed: Messrs. L. J. Carlin, Purch. Agent; Phil Baldauf, Engineer; O. B. Miller, Follow-Up; Art Tompson, Trimming Dept. Foreman.

"L. C. Chase who obtained the majority of the olive drab business when last contracts were placed have received orders for approx. 20,000 yards. Also Cotan

4043

was just recently given an order for 2,000 yards, altho no deliveries have as yet been made.

"U. S. Rubber have received orders for about 11,000 yards of the regular production material which is again being tried out on a suburban commercial job.

"In connection with the recent complaint on rapid dulling of the knives in cutting "Cavalon," I find that it is not particularly serious. In fact, Mr. Baldauf said that he did not know Carlin had taken it up with us or else he would have headed it off. I told Carlin that I would check up on the situation in the plant and advise the factory accordingly and that it would not be necessary for him to answer Fairfield's letter on the letters of Sept. 12th. It appears that this is not a particularly new situation.

—2—

"I went into the plant and ostensibly to check this condition obtained samples of Naugahyde, Reddo and Cohyde which are being forwarded to Fairfield so that the laboratory can give them any going over they wish. Baldauf is of the opinion that the Cotan Corporation is at present a very live outfit.

"It appears Mr. Bowman has not been contacting this account. LeFever has been down several times and Mr. Scott, formerly of Chase, is the local man on the territory.

"One thing which was brought up is that they are still having trouble in making "Cavalon" lie flat on the cutting table due to tight selvedges which throw

waves in it making it very difficult to cut accurately to pattern. This condition seems quite prevalent in our material and it is hoped that it can be corrected.

"Mr. Miller advised that nothing other than schedule would be required in September. A new order should be received between now and the first of the month. Production has been proceeding at a satisfactory rate altho due to the lull in selling prior to the introduction of the new models, production is now somewhat ahead of sales.

"I showed Mr. Baldauf samples of welting made up by Carter from material shipped under PS No. 40.241 and 40.244. These welts are being sent to Fairfield for test and include bases made with the following cores: Kraft, Tissue and "Fibreflex." Carter will submit direct to Chevrolet samples of these weltings and Mr. Baldauf will test them out in service locally."

We suggest that the three samples attached be fully analyzed for the various characteristics or essentials for a good upholstery material alongside of corresponding qualities in "Cavalon," results to be mounted on cards so that they can be submitted to Mr. Nalle with detailed comments for further discussion when next calling on Chevrolet-Commercial.

Up to the time of this writing the sample welts have not been received. Immediately upon their arrival they will be submitted to Mr. Schildhauer for the suggested tests.

Particular attention is called to the fact that Chevrolet are continuing to experience trouble because of tight selvages and in this connection it will be recalled that a similar complaint was received from Fisher Body, resulting in the return of

33 rolls of material. Whether the direct cause is the fabric itself or the crown in the calender we are not certain but feel that this matter should be investigated promptly and corrective steps taken.

W. W. Kaminsky

WWK:DLB

NOTE: There is an arrow pointing to the name "T. A. Nalle" at the top of the first page.

Defendant's Exhibit (DP) No. 310 6249

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

FABRICS & FINISHES DEPARTMENT

Detroit 2, Michigan
May 9, 1947

CONFIDENTIAL

MR. A. L. BROWN - NEWBURGH

CHEVROLET - INDIANAPOLIS

I have checked at Indianapolis and also with Jerry Haley, Assistant Director of Purchases in the Central Office, relative to the production picture.

Incidentally, Chevrolet production has to go on a 4-day week starting at once, and I understand Pontiac Fisher Body are closing today, with Buick probably next week, unless the steel situation improves immediately.

Now to go back to the truck situation -- 55,000 jobs per month is the expected capacity of the new Indianapolis plant. I am told that during May, due to change-over complications, they will build 10,000 trucks. They hope to get up to 25,000 for June, and will move towards 40,000 for July. When the 40,000 figure is actually in sight, the orders for "Fabrilite" will be larger.

I have been assured that so far we have not lost any business through color difficulties, and that we are still being given the same percentage as at the beginning of this model. I am quite sure our percentage is a minimum of 50, with the balance being divided between U. S. and Textileather. I understand that the material coming from these two sources is also no model of color uniformity, and I am sure they are having to use broken twills, etc. Although I do not know definitely, I am of the opinion that Textileather is not supplying too much, and it is my expectation that our percentage will actually increase as the model goes along.

You will remember that we ran into this multiple-source situation during the war years, for a combination of reasons with which you are familiar. During the

4047

6250

recent period of scarcity the purchasing agents have been working under instructions to maintain several sources for their own protection, and frankly I do not think we can expect an immediate change in that policy.

T. A. NALLE

TAN:olb

Defendant's Exhibit (DP) No. 311

E. I. DU PONT DE NEMOURS AND COMPANY.
DOLLAR SALES OF COATED FABRICS TO CHEVROLET COMMERCIAL BODY DIVISION, 1931 TO 1950

Year	Newburgh Sales	Fairfield Sales	Total du Pont Sales	Truck Production	Newburgh Sales Per Car Manufactured	Fairfield Sales Per Car Manufactured	Total du Pont Sales Per Car Manufactured
1931[1]	29,911	30,652	60,563	132,018	.23	.23	.46
1932	28,144	17,364	45,508	74,814	.38	.23	.61
1933	14,957	16,407	31,364	126,957	.12	.13	.25
1934	31,509	31,302	62,811	216,731	.15	.14	.29
1935	26,562	26,660	53,222	228,482	.12	.12	.24
1936	150,435	15,818[2]	166,253	256,131	.59	.06	.65
1937	157,143	142,017[3]	299,160	262,223	.60	.54	1.14
1938	391	184,592	184,983	164,017	.00	1.13	1.13
1939	222	314,998	315,220	244,437	.00	1.29	1.29
1940	191	326,933	327,124	243,717	.00	1.34	1.34
1941	0	334,528[4]	334,528	321,826	.00	1.04	1.04
1942	346	70,326	70,672	120,304	.00	.58	.58
1943	0	4,105	4,105	60,257	.00	.07	.07
1944	699	40	739	71,631	.01	—	.01
1945	99	62,518	62,617	91,435	.00	.68	.68
1946	3	820,574[5]	820,577	269,843	.00	3.04	3.04
1947	0	842,183	842,183	337,241		2.50	2.50
1948	0	738,374	738,374	391,141		1.89	1.89
1949	0	498,078	498,078	381,591		1.31	1.31
1950	0	485,000	485,000	492,002		.99	.99

[1]From 1930 through 1939 Chevrolet Commercial used coated fabrics purchased by the parent Chevrolet Division in Detroit which are not included here.

[2]Chevrolet adopted all steel decks on trucks in 1936.

[3]Chevrolet began to use du Pont "Cavalon" for upholstery on about 90% of its production.

[4]Cavalon used on about 60% of Chevrolet's production.

[5]Coated fabrics in short supply and Chevrolet bought all du Pont could supply.

Sources: General Motors Corporation Production Records.
Du Pont Departmental Trade Records—Fabrics Division Sales Cards.

Defendant's Exhibit (DP) No. 312

E. I. DU PONT DE NEMOURS AND COMPANY
YARDAGE SALES OF COATED FABRICS
TO CHEVROLET COMMERCIAL BODY DIVISION, 1931 TO 1950

Year	Newburgh Sales (Yards)	Fairfield Sales (Yards)	Total du Pont Sales (Yards)	Truck Production	Newburgh Sales Per Car Manufactured (Yards)	Fairfield Sales Per Car Manufactured (Yards)	Total du Pont Sales Per Car Manufactured (Yards)
1931[1]	52,959	62,059	115,018	132,018	.40	.47	.87
1932	60,720	40,626	101,346	74,814	.81	.54	1.35
1933	25,321	44,438	69,759	126,957	.20	.35	.55
1934	44,464	56,335	100,799	216,731	.21	.26	.47
1935	40,473	59,775	100,248	228,482	.18	.26	.44
1936	245,109	39,594[2]	284,703	256,131	.96	.15	1.11
1937	NOT	AVAILABLE[3]		262,223	—	—	—
1938	494	262,749	263,243	164,017	.00	1.60	1.60
1939	277	430,499	430,776	244,437	.00	1.76	1.76
1940	213	397,041	397,254	243,717	.00	1.63	1.63
1941	0	392,932[4]	392,932	321,826	.00	1.22	1.22
1942	719	68,635	69,354	120,304	.01	.57	.58
1943	0	3,801	3,801	60,257	.00	.06	.06
1944	792	30	822	71,631	.01	.00	.01
1945	111	58,374	58,485	91,435	.00	.64	.64
1946	3	535,013[5]	535,016	269,843	.00	1.98	1.98
1947	0	534,854	534,854	337,241	00	1.59	1.59
1948	0	476,009	476,009	391,141	.00	1.22	1.22
1949	0	338,743	338,743	381,591	.00	.89	.89
1950	0	363,698	363,698	492,002	.00	.74	.74

[1]From 1930 through 1935 Chevrolet Commercial used coated fabrics purchased by the parent Chevrolet Division in Detroit which are not included here.
[2]Chevrolet adopted all steel decks on trucks in 1936.
[3]Chevrolet began to use du Pont "Cavalon" for upholstery on about 90% of its production.
[4]Cavalon used on about 60% of Chevrolet's production.
[5]Coated fabrics in short supply and Chevrolet bought all du Pont could supply.

Sources: General Motors Corporation Production Records
Du Pont Departmental Trade Records—Fabrics Division Sales Cards.

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Defendant's Exhibit (DP) No. 313

62553

Excerpt from Report of Fabrikoid Division to C. W. Phellis, General Director of Sales for February 1921, dated April 2, 1921

"Early last Fall, Ford Motor Company purchased 900,000 yards of Rubber. After we had delivered approximately 480,000 yards, the orders were held up, leaving a balance of 420,000 yards unshipped. The Ford Company has requested us to make delivery of these goods during April and we have instructed the Plant to do so. Order was accepted and will be delivered at 95¢ a yard. Current market price is 55¢."

4051

Defendant's Exhibit (DP) No. 314

6254

Excerpt from Report of Fabrikoid Division to C. W. Phellis, General Director of Sales, for April, 1921, dated June 8, 1921.

"There has been very little improvement in general lines, but quite some improvement during April and May in the automobile orders. Many of the Automobile Companies have used up practically all of the stocks on hand, and as a result are purchasing material, although in considerably less quantity than last year. We have recently secured fairly large releases from the Chevrolet Motor Company, and some releases from Buick. The Ford orders were cleaned up during April, and even at the present rate of production, Ford will not be required to buy coated fabrics for some months, as he is operating his own manufacturing plant to the full capacity, and he has taken in several hundred thousand yards of material from ourselves and others."

4052

Defendant's Exhibit (DP) No. 315

6255

Excerpt from Report of the Fabrikoid Division to the Executive Committee for May 1923, dated July 2, 1923

"Ford Motor Company are now manufacturing at their own plant between 55,000 and 60,000 yards of leather substitute daily."

Defendant's Exhibit (DP) No. 316

6256

Excerpt from Report of Fabrikoid Division to Executive Committee for September, 1928, dated October 20, 1928

"Ford Motor Company have approved Fairfield Everbright Pontop for certain closed car work and we have induced the Ford Company to change a recently received 50,000 order for Pyroxylin Double Texture material to Fairfield Everbright Pontop at a saving of $12,000 to them and an increase in profit to our company. We feel reasonably sure that we shall continue to receive a steady volume of business from Ford."

4054

Defendant's Exhibit (DP) No. 317

6257

Excerpt from Report of Fabrics Division to Executive Committee for October, 1929, dated November 22, 1929

"An encouraging factor is our present enjoyment of the entire Ford business in black deck material; and we are hopeful that Fairfield's automotive business for 1930 will be reduced by less than 25% from the 1929 volume."

4055

Defendant's Exhibit (DP) No. 318

6258

EXCERPT

December 17, 1929

MR. WM. RICHTER
GENERAL MANAGER

FABRIKOID DIVISION
MONTHLY REPORT—NOVEMBER, 1929

• • •

OUTLOOK:

At Fairfield, though a 13% increase in sales is looked for in December, no wide improvement over present conditions is expected until after the first of the year, when an increase in automotive business is looked for. The Ford Motor Company's requirements are estimated at four carloads weekly, though just when shipments on this basis will begin is uncertain. Samples for the 1930 line for the garment trade and other specialty lines have been prepared and should result in some stimulation of trade.

• • •

Prices and Competition. The Ford artificial leather plant is again being actively offered for sale.

• • •

4356

DRAFT Defendant's Exhibit (DP) No. 319

6259

J. J. MOOSMAN - WILMINGTON

MR. RICHTER'S LETTER OF JANUARY 4
SALES PERCENTAGE 1929 - 1931

Generally, a detailed comparison of this Division's sales for 1931 with those of 1929 show that the decrease is about equally distributed over all industries that we serve, with the exception of tablecloth business at Newburgh and Ford at Fairfield, both of which show abnormally large decreases. Due to revised sales prices and a tendency with the trade to seek cheaper products, the yardage volume has not declined to the same extent as dollars. We estimate that about 15% of the total decline at both plants is attributable to these latter causes.

Government figures published for all artificial leather manufacturers show that we maintain our position of approximately 25% of the total sales in the industry. In 1929 we had 25-9/10% of the business - in 1930 26-4/10% and for 1931 our percentage will be about the same as 1930.

The decline of tablecloth and shelving volume amounted to 95% ($761,000). The year 1929 was the big year for this product, and at that time it was a novelty. Sales declined to $38,000 in 1931 due to the fact that our product was not sufficiently satisfactory to the trade to encourage repeat business; breakdown of our distributive system because of conflict between distributors; the re-styling, with considerable success, of their lines by the oilcloth manufacturers; the general business depression which caused retail stores to discontinue lines that were not showing a high turnover and wide price cutting which proved discouraging to re-

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tailers. We have now re-designed our line after securing much lower costs, and are beginning an intensive sales campaign with distribution directly by us. Through these methods, we feel that a substantial volume of business will be built on a constructive basis.

Export volume has declined 5% ($544,000) due to our withdrawel from the former principal markets, England and Australia, and due to world-wide economic conditions.

Bookbinding volume has declined 42% ($464,000). We continue to maintain a dominant position in this industry, and expect to improve our position this year through the promotional plans now under way. The introduction by us of the Lacquer Press is expected to improve our standing with a number of accounts. Our development of an ink which gives very satisfactory results on Fabrikoid, is nearing completion. When this ink is available to the bookbinding trade, the opportunity to increase the sale of Fabrikoid for text book purposes (now used in a limited way) will be greatly improved.

The decline in case covering amounting to 67% ($285,000) is due entirely to the lost popularity of portable phonographs.

Travelling goods industry shows a decline of 55% ($216,000). That industry has been in a weak position for two years. We have excellent contact with the important factors and will promptly capitalize on any improvement in the industry.

A decline of 33% ($126,000) in furniture and upholstery is due to general business conditions, and partly to the

4058

trend in the theater field towards the use of soft goods for upholstering chair backs. Fabrikoid continues to be used on the seats, but with the universal use of sound equipment in theaters soft goods are used as they have less of a deadening effect on sound than Fabrikoid. In the furniture field, our position is improving at present through greater sales of card table and glider material.

Novelty business declined only 2%. This includes principally pocketbook material, and we have been successful in maintaining a dominant position in that industry. Prospects are bright for very large volume this year from the pocketbook trade.

Foot wear at Newburgh increased 75% ($49,000). Our sales were low in 1929 as we were not prepared to produce a high glazed slipper material in style at that time. We have strengthened our selling position in the footwear industry and expect a substantial increase in sales.

Hats and caps increased 239% ($128,000) on account of the vogue which existed in 1931 for high glazed material in the millinery trade. This is strictly a style item, but indications are that in the Spring of this year patent leather will again by stylish and we are expecting to at least equal the large 1931 volume.

Tontine declined 43% ($668,000). This decline is less than the decline that took place in the high end of the shade business generally. In addition, the shade industry has been demoralized because of price cutting, but we have maintained our prices, thus improving the profit margin.

4059

Automotive volume at Fairfield declined 64% or $2,892,000. In 1929 Ford produced 1,946,000 jobs as compared with 725,000 in 1931. In 1929 we had the Ford business 100% as we had no real competition from the rubber industry on our Everbright finish. In 1931 Ford did no buying after May. Up to that time we had about 50% of his business. General Motors volume dropped $918,000 due chiefly to drop in production but partly due to production of a satisfactory varnish finish by our competitors, resulting in Fisher, as well as Ford, splitting their purchases. In 1929 we sold 80% of all rubber deck material used by all manufacturers. In 1931 this percentage will be around 65%. As a result of the imitation of Everbright by competitors our margin of profit on this business has been substantially reduced. Recently we have secured Packard's business on Super-Everbright and are quite hopeful of securing some Studebaker business.

Garment fabrics show a decline of 46% ($445,000). 1931 was a comparatively poor year in the raincoat field, and the demand had largely changed from leatherette fabrics to combined jerseys. The price situation on combined goods was such that we practically withdrew from the market as it was not possible to take business at a profit, as the rubberizers contributed only the labor of combining the two fabrics. We have recognized the necessity of producing a garment fabric distinctly different from, and superior to competitive products, and introduced our Cavaltex during the year which resulted in a substantial volume of sales

at an excellent profit margin. Much larger sales of this item are expected in 1932 and we also have other new products that should assist us in materially improving our position in the garment industry this year.

Specialties have increased 110% ($306,000), the revival of the vogue for corsets and reducing garments constituting $168,000 of the increase. This is a style item and has already declined in popularity.. The most favorable significance in the increased Specialties volume is the development of Hospital Sheeting and Pontan sales. Hospital Sheeting volume is 50% ($27,000) greater than in 1929 and because of our contacts established with Sears Roebuck, Ward Montgomery and chain store syndicates; we believe that this business, which is a permanent one with a large potential, holds great promise for the future. Similarly, our increase in Pontan, which is sold to the shoe industry, holds great promise of large volume in the future. Increased sales effort is being applied to the shoe field, our representatives handling all Fabrikoid Division products having taken over this field.

We tabulate below the percentage decline for our several industries and follow with brief comments of the more important items.

6264

DECREASE FROM 1929

Newburgh	Dollars	%		Fairfield	Dollars	%
Automotive	980 000	62		Automotive	2 892 000	64
Tablecloth	761 000	95		Garment Fabrics	445 000	46
Export	544 000	65		Mine Supplies	165 000	46
Bookbinding	464 000	42		Rug Anchor	17 000	19
Case Coverings	285 000	67		Miscellaneous	12 000	33
Travelling Goods	218 000	55		Specialties	206 000	Inc. 110 Inc
Furn. & Uphol.	126 000	33				
Railroads	48 000	55				
Novelties	10 000	2				
Footwear	49 000	75 Inc.				
Hats & Caps	128 000	239 Inc.				
Seconds	83 000	59				
Total Fabrikoid	3674 000	53				
Tontine	668 000	43				
Total Newburgh	4 342 000	51		Total Fairfield	3 225 000	52

Automobile production declined roughly 54% (five and one half million in 1929 to two andone half million in 1931). Newburgh automobile volume declined 62% ($980,000), reduced sales to General Motors accounting for 35% ($346,000) of this, due to curtailed production schedules; sales to Ford declined $110,000, we having sold Ford that quantity in 1929 and nothing in 1931. In 1929 Ford was building a soft back coupe on which he used a material purchased from us. This particular model was withdrawn and not included in the 1931 line. Most of the pyroxylin material used by Ford last year was manufactured in his own plant. The only other important decline in automobile manufacturers business was with Pierce Arrow, our sales to them dropping from $30,000 in 1929 to $1,000 in 1931. After they were taken over by Studebaker the deck material business formerly enjoyed for many years by Newburgh was given to

4062

Standard Textile Products. Of course this volume decreased largely in 31 as compared with 29. 33% ($331,000) of a decline in automotive products occurred in the replacement and accessory field. This was largely caused by decrease in the number of automobiles manufactured but also due to substitution of metal for Fabrikoid on spring boots and the use of uncoated cloth instead of Fabrikoid for curtains for closed jobs (at a considerable saving). At the present time there is a tendency away from metal and back to Fabrikoid for spring boots which will help our situation and we are also improving our position with the tire cover manufacturers by meeting some of the low priced competition that now prevails.

C. W. WEAVER

alb:fm

Defendant's Exhibit (DP) No. 320

6266

Excerpts from Report of the Du Pont Fabrikoid Company to F. W. Pickard for the month of January, 1919, dated March 6, 1919.

"While actual sales at present are small, general conditions are good and appearances indicate that business is assuming a proper basis. Inquiries are good in all lines. In January, we sold 30,000 yards to the Go-Cart trade, and this business is picking up very rapidly. In the automobile field, we sold 94,500 yards of Rubber to Oldsmobile; 10,000 yards to Auburn; 157,500 yards to Willys-Overland and have secured revival of old orders by Chevrolet to the amount of 623,000 yards of Fabrikoid and 300,000 yards of Rubber."

* * * * *

"The general price conditions are very much unsettled. Duratex Company is being equipped for the manufacture of Rubber coated material and expect to produce this within the next six weeks. The Duratex Company is the first source of supply of Willys-Overland Company."

4064

Defendant's Exhibit (DP) No. 321

E. I. DU PONT DE NEMOURS & COMPANY
DOLLAR SALES OF COATED AND UNCOATED FABRICS TO THE CHRYSLER CORPORATION, 1925 TO 1934

Year	Newburgh Sales	Fairfield Sales	Total du Pont Sales
1925	5,155	42,694	47,849
1926	0	122,293	122,293
1927	39,563	61,636	101,199
1928	9,452	130,889	140,341
1929	0	93,947	93,947
1930	60	26,601	26,661
1931	172	21,278	21,450
1932	0	45,666	45,666
1933	0	7,738	7,738
1934	58		

Source: Du Pont Departmental Trade Records—Fabrics Division Sales Cards.

Defendant's Exhibit (DP) No. 322

6268

LIST PRICE OF 6200 - 50" FABRIKOID

Date of Price Change	New Price
April, 1921	$1.36
July, 1921	1.23
Aug., 1922	1.25
Oct., 1922	1.37
Dec., 1922	1.45
Dec., 1923	1.40
April, 1925	1.45
Nov., 1926	1.40
June, 1927	1.35
Sept., 1927	1.40
May, 1930	1.35
Oct., 1930	1.30

4066

Defendant's Exhibit (DP) No. 323

E. I. DU PONT DE NEMOURS & COMPANY
YARDAGE SALES OF COATED AND COMBINED FABRICS TO THE CHEVROLET MOTOR COMPANY - 1922 TO 1935

Year	Newburgh Sales (Yards)	Fairfield Sales (Yards)	Total du Pont Sales (Yards)	Open Cars Manufactured	Newburgh Sales Per Car Manufactured (Yards)	Fairfield Sales Per Car Manufactured (Yards)	Total du Pont Sales Per Car Manufactured (Yards)
1922	NA	NA	NA	154,067	NA	NA	NA
1923	1,393,587	NA[1]	NA	266,389	5.23	NA	NA
1924	521,367	369,563[2]	890,930	156,958	3.32	2.35	5.67
1925	1,121,563	1,218,640[3]	2,340,203	225,059	4.98	5.41	10.39
1926	687,396	1,278,918	1,966,314	153,382	4.48	8.34	12.82
1927	761,657	999,918	1,761,575	133,604	5.70	7.48	13.18
1928	692,032	1,073,623[4]	1,765,655	118,682	5.83	9.05	14.88
1929	618,021	486,193[4]	1,104,214	81,497	7.58	5.97	13.55
1930	519,699[5]	370,452[6]	890,151	44,714	11.62	8.28	19.90
1931	477,124[5]	227,972	705,096				
1932	211,256[5]	72,613	283,869				
1933	322,207[5]	37,597	359,804				
1934	605,737[5]	81,320	687,057				
1935	508,224[5]	26,365	534,589				

[1] Twenty-five percent of Chevrolet top business during last six months went to du Pont's competitors.

[2] All of Chevrolet's top business during the first six months went to competitors, G.T. Ex. No. 418.

[3] All top materials purchased from competitors during first five months of 1925 except for one carload purchased from du Pont. Chevrolet started buying uncoated combined decking from Haartz.

[4] Large purchase of uncoated fabrics from Haartz replaced purchases of Pontop from du Pont.

[5] Includes upholstery bought for the Chevrolet Commercial Body Division in Indianapolis.

[6] Chevrolet started using uncoated decking on all new production. Du Pont began supplying about one-half of Chevrolet's requirements of this type of fabric.

Sources: General Motors Corporation Production Records.
Du Pont Departmental Trade Records - Fabrics Division Sales Cards.

6269

Defendant's Exhibit (DP) No. 324

E. I. DU PONT DE NEMOURS AND COMPANY
YARDAGE SALES OF COATED AND COMBINED FABRICS TO
THE OAKLAND MOTOR COMPANY, 1922 TO 1933

Year	Newburgh Sales (Yards)	Fairfield Sales (Yards)	Total du Pont Sales (Yards)	Open Cars Manufactured	Newburgh Sales Per Car Manufactured (Yards)	Fairfield Sales Per Car Manufactured (Yards)	Total du Pont Sales Per Car Manufactured (Yards)
1922	NA	NA	NA	14,830	NA	NA	NA
1923	63,789	NA	NA	23,424	2.72	NA	NA
1924	40,561	130,182	170,743	18,460	2.20	7.05	9.25
1925	18,490	32,132	50,622	5,042	3.67	6.37	10.04
1926	42,839	11,626[1]	54,465	8,723	4.91	1.33	6.24
1927	94,483	10,512	104,995[2]	12,209	7.74	.86	8.60
1928	122,932	9,084	132,016	14,050	8.75	.65	9.40
1929	61,550	1,005	62,555	8,372	7.35	.12	7.47
1930	12,777	0	12,777	3,202	3.99	.00	3.99
1931	108	570	678				
1932	26,637	0	26,637				
1933	59,305	0	59,305				

[1] Oakland started using combined uncoated fabrics on that part of its production formerly using Pontop. These fabrics were not supplied by du Pont and Pontop was thereafter used for service parts only.

[2] Du Pont supplied Oakland with a substantial part of its requirements of artificial leather in 1927 and 1928 but had little of its top business after 1922.

Sources: General Motors Corporation Production Records.
Du Pont Departmental Trade Records - Fabrics Division Sales Records.

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Defendant's Exhibit (DP) No. 325

6271

PURCHASES OF COATED AND COMBINED FABRICS
PER CAR BASIS
From GM 151 and DP 259, 263 and 265)

General Motors Division	Total 1922 Purchases	Purchases From Du Pont 1925	1926
Oakland (artificial leather)	$ 5.39	$ 3.07	$ 3.91
Buick (artificial leather and top materials)	8.28*	4.66	6.11
Oldsmobile (artificial leather and top materials)	12.55	11.65	7.37

* Purchases from du Pont only.

Defendant's Exhibit (DP) No. 326

6272.

1764 Broadway
July 5, 1918

Mr. F. W. Warner,
General Manager Oakland Motor Car Company
Pontiac, Michigan.

My dear Mr. Warner:

The duPont Company are anxious to check their statistical records of 1917 and 1918 in the matter of production of artificial leather and have asked me to obtain for them the amount actually used by us in those years.

I am therefore writing to ask if you will have the following designations checked and see if they are correct as to number of yards purchased, viz:

	1917	1918
Chase	70,090	28,285
Chase Rubber	279,155	83,340 to May 31/18
Boston Hose and Rubber Co.	62,505	83,340 to Apr. 30/18

Trusting that it will not be too much trouble to have this looked up and appreciating any help you may give in the matter, I remain

Yours very truly,

Vice President.

4073

E

Defendant's Exhibit (DP) No. 327

6273

FILE 78

1764 Broadway
July 5, 1918

Mr. E. VerLinden,
General Manager Olds Motor Works
Lansing, Michigan.

My dear Mr. VerLinden:

The duPont Company are anxious to check their statistical records of 1917 and 1918 in the matter of production of artificial leather and have asked me to obtain for them the amount actually used by us in those years.

I am therefore writing to ask if you will have the following designations checked and see if they are correct as to number of yards purchased, viz:

	1917	1918
Chase	26,005	111,650 to Apr. 30/18
Textileather ..	23,325	54,150 to May 31/18

Trusting it will not be too much trouble to have this looked up and appreciating any help you may give in the matter, I remain

Yours very truly,

Vice President.

4071

E

Defendant's Exhibit (DP) No. 328

October 24, 1932

6274

C. W. WEAVER

AUTOMOTIVE SITUATION

The most outstanding thing at the moment in our Detroit situation is the very apparent improved relationship which Mr. Staples has created with the Fisher Body organization. This Fall they are sending us inquiries on items which in the past, in some cases, have gone to competition without our having even a chance to quote on them. I refer particularly to colored deck material. On the 7500 quality business just taken for Chevrolet rumble seat upholstery, last year Fisher did not give us an inquiry until the original orders had been placed with competition, and I believe the inquiry then resulted ~~in~~ from our asking them about it.

As near as we can determine at present, all of the coated fabric to be used in the Fisher Chevrolet bodies will be Fabrikoid. Also according to latest information, Everbright Pontop will be used 100% for decks. Likewise, pyroxylin coated curtain materials are being used this year, replacing uncoated fabric used in the previous model. In the case of Fisher-Buick we are not faring quite so well due to the fact that we did not meet competitive prices on the recent Fisher inquiries involving 6000 and 4000 qualities. However, Super Everbright will be used 100% on the Buick bodies requiring black deck material.

One sample of green pyroxylin Pontex has been sent out for Fisher's consideration in connection with Buick and several other Duco chips have been received for matching. As far as possible, all of these colors are being matched in both pyroxylin and in Colortone Pontop.

Although Fisher orders have been received in very good volume during the last few weeks, it must be remembered that these orders are in most cases for delivery from late October until late December. The following orders have been received:

20 500	yards	- 4000 quality - Chevrolet kick pads, etc. (This order was today increased to 35 500 yards)
15 000	yards	- 7500 quality - Chevrolet rumble seat upholstery
32 000	"	- 711 " - Chevrolet curtain material
70 000	"	- Super Everbright Pontop 554-43"-Chevrolet decks
13 000	"	- 711 quality - Buick curtain material
35 000	"	- Super Everbright Pontop 554-45"-Buick black decks (delivery scheduled to be completed in November)
1 200	"	- 7500 quality - Oldsmobile rumble seat upholstery. (This order was just received today, specifying shipment beginning November 7th and extending over six weeks).

- continued -

4072

The quantities of Chevrolet materials indicate reduced production schedules as compared to the same period last year.

You are familiar with the inquiry from Fisher for a very cheap deck material.

We have been awarded the Chevrolet open car contracts on both Fabrikoid and Teal, the major Fabrikoid items (6200 quality) at increased prices of 4-1/2¢ for black and 4¢ for Spanish, and several minor items at decreased prices ranging from 5-1/2¢ to 9-1/2¢ and the Teal at a 2¢ decrease. As you know we have contracts with Chevrolet for these materials running to the end of 1932. Nevertheless, the inquiries were received asking us to quote on the new contracts from date to June 30, 1933. Chevrolet has apparently figured out that the aggregate cost will be greater on the new contracts than on the old, because according to Mr. Tomlinson's letter of October 20th, they wish the new contracts to become effective January 1st instead of at present.

We have matched up several colors for Pontiac curtain material but according to Mr. Tomlinson, this business will probably be given to Textileather, although we do not know if it has already been placed.

FORD MOTOR COMPANY

Ford production is down very low and we understand that the Ford plant will manufacture from 50 to 100 000 yards of rubber deck material whenever such yardage may be needed. We have forecast no business from Ford for the last quarter of 1932. Ford is also interested in a very cheap deck material, and today Mr. Watt has inquired from Mr. Tomlinson if we could supply curtain material at 8¢ per 27" yard. Also, if we would coat some of their cloth into curtain material and at what price. Attached is a confidential bulletin just received on Ford, indicating that they are still having new model troubles.

Chrysler has announced a six cylinder Plymouth for next year. We have been supplying Chrysler's Teal and expect to do so next year, although so far no new orders have been placed. We are not on the approved list for Fabrikoid, but are endeavoring to get approved.

The total automotive production for October is expected to be considerably less than 50 000 units. The manufacturers are making efforts to keep the introduction of new models with one eye on the political situation and the other on Wall St. Dealers stocks are reported to be in very satisfactory condition, leaving them in good shape to plunge into the new model selling.

TAN/AJK

T. A. NALLE

Defendant's Exhibit (DP) No. 329

LG-4884



COPY

6276

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON 98, DELAWARE

LEGAL DEPARTMENT

June 1, 1953

Mr. Ira C. Werle,
Assistant General Counsel,
Eastman Kodak Company
Rochester 4, New York.

Dear Mr. Werle: Re: U. S. v. du Pont, et al.

Could you kindly furnish us with a statement of the total dollar volume of sales of cellulose acetate molding powder made by the Tennessee Eastman Division of your Company to the Inland Manufacturing Division of General Motors Corp. during each of the years 1937-1941 inclusive?

It is our intention to introduce such statement in evidence in the above captioned case now on trial in the Federal District Court for the Northern District of Illinois.

Very truly yours,

General Counsel.

NOTE: Original copy of letter signed by Mr. Stanley L. Abrams.

4074

Defendant's Exhibit (DP) No. 330

June 5, 1953

Stanley L. Abrams, Esq., General Counsel
E. I. du Pont de Nemours & Co., Inc.
Legal Department
Wilmington 98, Delaware.

6277

Dear Mr. Abrams:

By letter dated June 1, 1953, addressed to Mr. Werle, you requested a statement of the total dollar volume of sales of cellulose acetate molding powder made by the Tennessee Eastman Division of this company to the Inland Manufacturing Division of General Motors Corporation during each of the years 1937-1941, inclusive. It is our understanding that this information is requested for use as evidence in the case entitled U. S. v. du Pont et al., now on trial in the Federal District Court for the Northern District of Illinois.

At the dates in question our Tennessee Eastman Division was a wholly owned subsidiary of Eastman Kodak Company known as Tennessee Eastman Corporation. We do not have exact dollar figures of our sales during the period 1937 through 1941, but we believe the information furnished below may serve your purpose. Our records show that Tennessee Eastman Corporation sold the following quantities of cellulose acetate molding powder (known as Tenite I) to the Inland Manufacturing Division of General Motors during the years in question:

1937	517,153 pounds
1938	49,612 pounds
1939	589,696 pounds
1940	784,279 pounds
1941	1,159,942 pounds

We do not have available the invoices covering these sales, but from price lists which were in effect during the years 1937 through 1941, we have been able to estimate the following average prices per pound at which we would have sold Tenite I to Inland Manufacturing Company during the respective years, as follows:

4075

1937	57¢ per pound
1938	55¢ per pound
1939	49¢ per pound
1940	45¢ per pound
1941	44¢ per pound

Extending the poundage figures at these estimated average prices, the dollar sales are estimated as follows:

1937	$294,277.21
1938	27,286.60
1939	288,951.04
1940	352,925.55
1941	510,374.48

This would make total sales for the five-year period of approximately $1,475,000.

Since we do not ordinarily publish or otherwise disclose figures such as these, we would expect that they would be used solely for the purpose mentioned in your letter of June 3 and would not be given any wider currency than the situation requires.

Yours very truly,

Secretary

MKRobinson:WC

NOTE: Original copy of letter signed by M. K. Robinson

Defendant's Exhibit (DP) No. 333

[redacted]

INDUSTRIAL SALES TRADE REPORT
E. I. DU PONT DE NEMOURS & COMPANY, Inc.
Industrial Finishes Division

Salesman W. P. Fisher Date 1/14/32 Report No. 8

Customer PACKARD ELECTRIC COMPANY Class No. 1

Street and No. Dana St. Business Cable.

Town Warren State Ohio.

Person Interviewed Kempler, F.F. Snyder, P.A. Title Buyer Title

HANDLED (Write out Colors not handled)	IMMEDIATE PRIOR PURCHASES: Quantity	Grade	Price	From Whom	Comp. Contract Expires	Approximate Consumption Next 12 Mos.	In Market Again
SOLVENTS							
SOLUTIONS		film	scrap	.62 Arco		25000	
LACQUERS	Lt.&rs. Clear		XXXX	F.S.Co.		3000	
	Gl. blk.		1.65	DuPont		15000	
		3126	.80	DuPont		1000	
THINNERS							
BR. LIQUIDS							
FX ENAMEL							
BR. POWDER							
READY MIXED							
VARNISHES	bbls.	Ins.		F.S. Co.		1500	
	1 V	BM-8564		DuPont		1000	
PASTE PAINTS							
OIL ENAMELS							
PASTE FILLERS							
STAINS							
BLACK JAPANS							
WHITE LEAD W/O							
PRIMERS & UNDERCOATERS							
MAINTENANCE							

PE1

6077

1. Give important reasons why customer or prospect buys from competitors (quality, service and price).
2. (a) Are you familiar with and have you given due consideration to EVERY PRODUCT customer or prospect buys?
   (b) What products should we concentrate on to initiate sales with least delay?
3. Is customer or prospect operating at full capacity? If not, give approximate percentage.
4. What action do you wish us to take?
5. List names and titles of persons to receive mailings.

EVERY QUESTION MUST BE ANSWERED, GIVING IMPORTANT DETAILS

1. Quality and friendship.
2. (a) Yes. (b) All.
3. 60%.
4. See below.
5. W.S.Johnstone, J. A. Snyder.

REPORT ON BLACK LACQUERS WITH HALF REGULAR GREASE CONTENT.

X-1-622 has been run, and the report is that it shows a slight tack. Further action in regard to reduction of grease content for production use should be held in obeyance until work has been completed with X-1-621, which will be next Wednesday. At that time I will advise what material to make up for the next shipment.

In the meantime do not make up any Black at all.

CONTRACT FOR FIRST SIX MONTHS OF 1932.

Snyder asked me to have you figure on their business for this period in two ways.

1. On the basis of half the business, estimated at 100 drums.
2. All the business estimated at 200 drums.

This would not need to take the form of a contract, as it

6279

would merely be necessary for you to write him our terms.

It is my suggestion that you quote a price on the basis of/100 drum order, and that you state that in the event that their purchases for this period are in excess or equal to a total of 200 drums, we will give them a refund of so much per gallon.

I found out that at a meeting last week of the various officials, Eddie Rumpler definitely told them that he thought our material was generally superior to Arco. Of course, right now as everyone knows the present Arco material is not approved. I was in the Laboratory when Arco's last sample was tested, and I would say that it still shows too much shrinkage after heating.

I think that if it is at all possible, it would be very good policy to make a small price reduction. Even though we have not had all of Packard's Black business for 1931, the total volume has been very attractive. According to my records their total purchases have been in excess of $25,000 for 1931. Prices have always been on a profitable basis with no haggling whatsoever. While, as you state in your recent memo, Snyder is friendly to both F. S. and Arco, it is true, but the only competitor we have on Black at present is Arco. There are dozens of lacquer people calling here who never even get a chance to discuss their product, let alone a chance to have samples tested or to find out what Packard's requirements are.

If it were not for Snyder's policy of sticking to the three suppliers, we would probably have a price cutting situation to meet here. Therefore, I believe that if it is at all possible, it would be very wise to make a small price reduction.

I have yet received no reply to the second part of my letter of December 30th, referring to the trouble they are having with 6239 wiping off. I am sending further memo together with sample of cable.

Defendant's Exhibit (DP) No. 334

Form PF 3740 3M6 11-33

WILMINGTON F & F SALES RECORD COPY

INDUSTRIAL SALES TRADE REPORT

E. I. DU PONT DE NEMOURS & COMPANY, Inc.

Finishes Division

Salesman W.P. Fisher Date 5-7-34 Report No. 134

Customer Packard Elect. Corp. Class No. 1

Street and No. Bldg Business Auto Cable.

Town Warren State Ohio

Person Interviewed W.S. Johnstone Eng. Buyer Title

Product Used	Physical Condition	Grade	Price	Pkg.	F.O.B.	FROM WHOM	Approximate Consumption Next 12 Mos.	In Market Again
SOLVENTS								
SOLUTIONS	G/L	Film	.60	D	Del.	Eastman	30000	
LACQUERS	Spec.	Blk HT		D	"	Arco	12000	
	"	Clear HT		D	"	U.S. Co.	4000	
THINNERS	"		.50			Eastman	12000	
BR. LIGHTERS								
PX ENAMEL								
PX PRIMERS & UNDERCOATERS								
BR. POWDER								
READY MIXED								
VARNISHES	Spec.	Asph.	.37			Barrett	5000	
	"	Imperial	?			?	2000	
PASTE PASTES								
OIL ENAMELS								
PV PRIMERS & UNDERCOATERS								
STR. ENAMELS								
SYNTHETIC UNDERCOATS								
BLACK JAPANS								
MAINTENANCE								

E 6207

1 Give information relative to competitive activities.
(a) Why does customer or prospect buy from competitors (quality, service and price, etc.
(b) Additional competitive information:

2 (a) At what percentage of capacity is customer or prospect operating?
(b) What is their business outlook.

3 List names and titles of persons to receive mailings.

REPORTS ON CALLS MUST BE RENDERED ON BASIS OF
(a) PURPOSE OF CALL
(b) RESULTS OF CALL
(c) ACTION NEEDED

Rec'd 5-9 Typed 5-10-34 AH

1 a All three
b -

2 a 50% (Temporary result of Fisher Body strike)
b -

3 W.S. Johnstone, Cable Eng.

A) Follow up tests prior to Johnstones departure for 500 mile runs.

B) They had only applied 5 coats our of last drum of L-600-174, plant being shut down today. Rumpler promised to finish this cable up tomorrow. They are going to run heat and oil tests on it, 5/14 and promise me a report by 5/15 which will be O.K. before next buy as they are not purchasing anything this month.

Other Tests

L-600-244 Tangerine
L-600-213 Clear H.T. (Extra heat)
L-600-230 Clear H.T.

No tests have been run on any of these due to recent production trouble, but they promise early action on all.

C) None.

6281

DEFENDANT'S EXHI Defendant's Exhibit (DP) No. 335

Form PP 3749-25M Sets 1-15

WILMINGTON P & P SALES RECORD COPY

CC: T. T. Taylor
R. C. Williams

INDUSTRIAL SALES TRADE REPORT

E. I. DU PONT DE NEMOURS & COMPANY, Inc.

Finishes Division

Salesman W. S. Robertson Date 5-8, 4 5-9 '36 Report No. 59

Customer Packard Electric Co. Class No 1

Street and No. Dana t. Business Ins. Cable

Town Warren State Ohio

Person Interviewed J. L. Litman Title Eng. Buyer E.E.Debolt Title P.A.

Products Used	Normal Purchases	Grade	Price	Pkg.	F. O. B.	FROM WHOM	Approximate Consumption Next 12 Mos.	In Market Again
SOLVENTS								
SOLUTIONS		Supplementary						
LACQUERS								
THINNERS								
BR. LIQUIDS								
PX ENAMEL								
PX PRIMERS & UNDERCOATERS								
BR. POWDER								
READY MIXED								
VARNISHES								
PASTE PAINTS								
OIL ENAMELS								
PV PRIMERS & UNDERCOATERS								
SYN. ENAMELS								
SYNTHETIC UNDERCOATS								
BLACK JAPANS								
MAINTENANCE								

6284

1 Give information relative to competitive activities:
(a) Why does customer or prospect buy from competitors (quality, service and price, etc.)?
(b) Additional competitive information:

2 (a) At what percentage of capacity is customer or prospect operating?
(b) What is their business outlook.

3 List names and titles of persons to receive mailings.

REPORTS ON CALLS MUST BE RENDERED ON BASIS OF:
(a) PURPOSE OF CALL
(b) RESULTS OF CALL
(c) ACTION NEEDED

Received & Typed 5/12/36 - C.O.L.

(a) With T. T. Taylor of Parlin and Bill Fisher to investigate complaint on 6256 Black M. T. cable lacquer.

(b) Taylor had brought the Gardiner Mobilometer used by Parlin and the first thing we did was to compare this with Dr. Litman's equipment. We found that both our mobilometer and method of running viscosities were considerably different from those used by Dr. Litman. This explained the wide difference in results obtained

Taylor also explained that our black was originally formulated at a viscosity higher than the clear which accounted for the discrepancy we got between these two materials. The specifications call for the same viscosity.

Knowing that the first shipments had been made at a viscosity much higher than specified and had partially been used satisfactorily, and knowing that the 14 drum shipment complained of was shipped at a lower viscosity than the original shipments, we urged Dr. Litman to try one of the 14 drums in production. Dr. Litman agreed in view of our explanation and a drum was started in production Friday afternoon. Some sleeving was encountered but an adjustment of the wipes helped to eliminate this trouble.

(Cont'd.)

6284

6284

6283

Other than this the cable seemed to be coming thru satisfactorily.

Saturday morning we returned to learn how our lacquer had been working on the night shift. It had worked satisfactorily and Litman, therefore, agreed to use up our 14 drums provided he did not encounter any more trouble. He would not use the two and one-half drums remaining from the first shipment and these are being returned to Parlin. I am also returning the five drums just received at the warehouse, as these are also too high in viscosity.

Taylor will revise 6256 to meet the specifications in viscosity. At the same time he will lower the solids so that our lower limit is the same as the minimum permitted in the specifications.

Arco has submitted a low tension cable lacquer for Packard's new high speed machines. This material was apparently made from celluloid scrap as the oder of camphor was much stronger even than film scrap. It produced an excellent looking cable from the standpoint of smoothness and gloss, but showed the same white bubble trouble we had and had a very strong camphor odor.

It now appears that Litman will be able to use his regular film scrap material (by following leads suggested by us in our blends) for making cable for auto manufacturers. However, he still expects to use a better finish on dealer cable and we have a good chance of getting this portion of the business if we can supply a satisfactory product at a reasonable price.

C. Advise Parlin of the return of the 2½ drums of 6256 by Packard.

Enter a prepare and hold order for 10 drums 6256 with the notation that it is to be revised material and is to be tested by Taylor. I will obtain an order and release from Packard later.

Taylor will write a more detailed laboratory report on his visit.

E

4081

WILMINGTON F & F SALES RECORD COPY

Finishes Division

Salesman: W. S. Robertson Date: 9/11/41 Report No. 175

Customer: Packard Electric Co. Class No. 1

Street and No.: Dana St. Business: Ins. cable

Town: Warren State: Ohio

Person Interviewed: DeBolt. Title Buyer Title

Products Used	Normal Purchases	Grade	Price	Pkg.	F. O. B.	FROM WHOM	Approximate Consumption Next 12 Mos.	In Market Again
SOLVENTS								
SOLUTIONS								
LACQUERS	c/l	Film	.60	D		Eastman	70,000	
	c/l	6233	1.90	D		Roxylin&others	50,000	
	5 drs	Syn.		D		Glidden-Spco	5,000	
THINNERS	c/l	Film	.50	D		Eastman	40,000	
BR. LIQUIDS								
PX ENAMEL								
PX PRIMERS & UNDERCOATERS								
BR. POWDER								
READY MIXED								
VARNISHES	Drs.	Black	.30	D		Pruitt Schaefer	2,000	
	Drs.	Clear	.52	D		Schenectady	3,000	
PASTE PAINTS								
OIL ENAMELS								
PV PRIMERS & UNDERCOATERS								
SYN. ENAMELS								
SYNTHETIC UNDERCOATS								
BLACK JAPANS								
MAINTENANCE								

2805

FF-3749-B-10M Sets 11-39 INDUSTRIAL SALES TRADE REPORT

E. I. DU PONT DE NEMOURS & COMPANY, Inc.

1 Give information relative to competitive activities:
(a) Why does customer or prospect buy from competitors (quality, service and price, etc.)?
(b) Additional competitive information:

2 (a) At what percentage of capacity is customer or prospect operating?
(b) What is their business outlook.

3 List names and titles of persons to receive mailings.

REPORTS ON CALLS MUST BE RENDERED ON BASIS OF:-
(a) PURPOSE OF CALL
(b) RESULTS OF CALL
(c) ACTION NEEDED

Received & typed 9/12/41 lw

1. (a) All three
(b)

2. (a) 80%
(b) Good

3. E. E. DeBolt, P. A.
J. B. Litman, Chemist

4. To advise customer we could only supply 6233 on a priority.

5. Explained to DeBolt that 6233 contained a raw material that could only be used on orders with a priority. As this type of lacquer is used on Naval cable they are able to give us an A-1-B priority and DeBolt will send one through. This lacquer is also used on regular automotive cable which does not carry a priority. However, as none of our competitors have asked for a priority on this material DeBolt thinks he could give us the naval business and get his regular automotive requirements from his other sources. Incidentally he just placed orders for two carloads of this type lacquer.

-over-

6284

BEDFORD-PATO-AMERICAN SALES BOOK CO., INC. NIAGARA FALLS N. Y.

The competitive price level is still $1.90 and DeBolt expects us to fill this old order entered and accepted by us last June at this price. The new price given for this lacquer is $2.00 but as this is high I would like permission to go at least to $1.95 in 20 dr. lots and $1.90 in carloads.

They are still using an aluminum finish on Allison harness sets for which we have no approved offering.

Enter order with priority for 5 drums 6233 and advise me shipping date.

Advise me on price of 6233.

Defendant's Exhibit (DP) No. 337

Form 159

AUTOMOTIVE PRODUCTS TRADE REPORT

Flint Plant [illegible] & Types 6/19/51

Salesman [illegible] Territory No. Report No. 109

Class Date 6/19/51

Name of Firm Frigidaire Corp. County State [illegible]

Street Address

Town [illegible]

Name of Purchasing Agent

Name of Man to See Title

Products Used	If Competitor Give Name of Manufacturer	Total Annual Consumption	Price	When in Market or Expiration Date of Contract
	D			
	C			
	D			
	C			
	D			
	C			

1. If customer has any complaint on our products or service, explain nature of same fully.
2. Are competitor's products satisfactory? If not, why?
3. Advise chief reasons why customer or prospect buys from competitors (quality, service, price, etc.)
4. Have you interviewed Superintendent, Foreman, Finisher and all other Supervisors who might affect our sales?
5. Are you familiar with and given consideration to every product customer or prospect uses?
6. Are shop conditions and equipment for finishing good? If not, explain why.
7. Is customer operating at full capacity? If not, give approximate percentage.
8. Customer's approximate schedule (jobs per day) for ensuing three months.
9. Remarks and further details.

NOTE: In answering always use numbers.

Talked to E. J. Barney, Director of materials and supplies, regarding method of handling contacts between Upson and Frigidaire, sales department, purchasing, engineering and laboratories.

Mr. Barney said, he would see that sample of Lac 2018 submitted some time ago, was tested on Ice Cream Cabinets.

Mr. Barney said that at meeting three weeks ago attended by Mr. Pratt, Vice President, General Motors it was decided again to stick to porcelain for Frigidaire cabinets and that present plans do not call for use of lacquer.

Further developed that Black Porcelain shows promise for Ice Cream Cabinets. This came from Harry Williams.

Note:

Page 6288 is on card 132.

Defendant's Exhibit (DP) No. 339

Form 189

AUTOMOTIVE PRODUCTS TRADE REPORT

Rec'd & Typed 12/5/30

CC:- E.J.

Parlin Copy

Salesman R. M. Cook Territory No. Report No. 66

Class Date 12/3/30

Name of Firm Frigidaire Corp. County State Ohio

Street Address

Town Layton

Name of Purchasing Agent Mr. Campbell

Name of Man to See Mr. Rowland, A.P.A. Mr. Olson Title Chief Chemis

Products Used	If Competitor Give Name of Manufacturer	Total Annual Consumption	Price	When in Market or Expiration Date of Contract
	D			
	C			
	D			
	C			
	D			
	C			

1. If customer has any complaint on our products or service, explain nature of same fully.
2. Are competitor's products satisfactory? If not, why?
3. Advise chief reasons why customer or prospect buys from competitors (quality, service, price, etc.)
4. Have you interviewed Superintendent, Foreman, Finisher and all other Supervisors who might affect our sales?
5. Are you familiar with and given consideration to every product customer or prospect uses?
6. Are shop conditions and equipment for finishing good? If not, explain why
7. Is customer operating at full capacity? If not, give approximate percentage.
8. Customer's approximate schedule (jobs per day) for ensuing three months.
9. Remarks and further details.

NOTE: In answering always use numbers.

6290

Called with H. C. Williams and talked over with Mr. Campbell their policy with regard to purchases. Using Clear Waterproof Varnish as an instance. We reduced our quotation from 96¢ to 92¢ for a contract for annual requirements, and then to 88¢. From them it is doubtful whether we will get the contract because Frigidaire is going back to their present supplier to try to get a quotation less than 88¢.

Mr. Campbell was very cordial and friendly in his attitude, but said that their policy was to buy these specification materials at the lowest price, depending on their laboratories to keep quality satisfactory, at the same time they do not expect the supplier to sell without profit, but expect him to make his quotations, bearing this in mind.

I brought up the question of research and experimental work in developing products for them, such as, the recent request for a finish to a ply over wood and galvanized iron, and Mr. Campbell says that if we develop a satisfactory material for them, it would not be thrown open to competition, for a year or so, but if they do not open these items to competition, we would not be able to quote on items such as Clear Waterproof Varnish, which was developed for them by someone else. Their consumption of this item will be materially reduced or eliminated by a change in design which will eliminate the wooden strips inside the cabinet on which to varnish is used.

8805

As gathered from both Mr. Campbell and Mr. Chase the Frigidaire would not be buying Duco or Lacquer for use on

1. If customer has any complaint on our products or service, explain nature of complaint.
2. Are competitor's products satisfactory? If not, why?
3. Advise chief reasons why customer or prospect buys from competitors (quality, service, price, etc.)
4. Have you interviewed Superintendent, Foreman, Finisher and all other Supervisors who might affect our sales?
5. Are you familiar with and given consideration to every product customer or prospect uses?
6. Are shop conditions and equipment for finishing good? If not, explain why.
7. Is customer operating at full capacity? If not, give approximate percentage.
8. Customer's approximate schedule (jobs per day) for ensuing three months.
9. Remarks and further details.

NOTE: In answering always use numbers.

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their own cabinets before the latter part of 1931. However, they may buy for finishing competitive cabinets, such as, Westinghouse, on which they are successful bidders for construction. Here may be one of these.

DUX PUTTY-1900:- Mr. Chase brought up a problem they will probably have, caused by a change in design of cabinet. They will want to put a small depression on the cabinet, before the primer is applied. Mr. Williams had a quart of Dux 1900 sent which has been used by Chevrolet in the past in this manner.

X-2C-1300--WASHING MACHINE ENAMEL:- One gallon sample (Berlin's letter Nov. 17th.) received but plant is shut down and cannot test material. Operations will probably be resumed about December 8th.

M-42006-ROCHESTER BLACK (JAPAN) OR COMPOUND:- This business amounting to about 14,000 gallons per year is now held by Key & Co. Our sample was submitted sometime ago and is still under test.

DUCO OR LUCO vs. PORCELAIN ENAMEL:- This question is being discussed in Frigidaire Corp. The decision to use one coat of primer and two coats of Duco on the Westinghouse cabinet will reduce cost. The primary reason for using lacquer is that the cabinet is one piece on which porcelain cannot be used.

I learned that changes in accounting methods at Plant No. 2 will remove some of the overhead from the item cost and thus reduce the book cost.

6807

1629

Defendant's Exhibit (DP) No. 340

FORM FF-6N3-Ae

Finishes Division

Salesman R M Cook Date 1/25/39 Report No. 1

Customer Frigidaire Corp Class No.

Street and No. Taylor St. Business Refrig

Town Dayton State Ohio

Person Interviewed Title Buyer Title

Products Used	Name of Purchaser	Grade	Price	Pkg	F.O.B.	FROM WHOM	Approximate Consumption Next 12 Mos.	In Market Again
SOLVENTS	E.J. Barney-Purchasing Dept							
	J.H. Rininger-Purchasing Dept							
SOLUTIONS	G.R. Long-Eng. Dept.							
LACQUERS								
						CC:C.R.E. Meikle		
						E.J. Radlee		
THINNERS						J.G. Armstrong		
						D.J. O'Connor		
BR. LIQUIDS						C.D. Armstrong		
PX ENAMEL						T.F. Burns		
						Phila.-1		
PX PRIMERS & UNDERCOATERS								
BR. POWDER								
READY MIXED								
VARNISHES								
PASTE PAINTS								
OIL ENAMELS								
PV PRIMERS & UNDERCOATERS								
SYN. ENAMELS								
SYNTHETIC UNDERCOATS								
BLACK JAPANS								
MAINTENANCE								

0607

INDUSTRIAL SALES TRADE REPORT
E. I. DU PONT DE NEMOURS & COMPANY, Inc.

Give information relative to competitive activities:
(a) Why does customer or prospect buy from competitors (quality, service and price, etc.)?
(b) Additional competitive information:

2 (a) At what percentage of capacity is customer or prospect operating?
(b) What is their business outlook.

3 List names and titles of persons to receive mailings.

REPORTS ON CALLS MUST BE RENDERED ON BASIS OF:
(a) PURPOSE OF CALL
(b) RESULTS OF CALL
(c) ACTION NEEDED

Read 1/31 Typed 2/1/39 E.V.

(A) Called here with L C Streeter

(B) General discussion with Mr Barney With Long and Rininger discussed in detail finish for commercial refrigerator cabinets K & S primer and splatter finish has been adopted Preferred over Hammered Finish submitted by du Pont because:

1 Better general appearance.
2 Lack of undesirable high gloss
3 Finish air-dry instead of bake
4 Air dry finish much easier to refinish in service

Number of cabinets to be produced this year about 1000

It developed that Frigidaire will eventually return to use of wrinkle Also they have one manufacturer who may supply it without paying royalty to the present patent combine

Frigidaire agreed for us to submit our offerings of splatter finish or any other finish which might have application

6292

Defendant's Exhibit (DP) No. 341

Form PP 3748-A

Finishes Division

Salesman E. M. Cook Date 7/17/39 Report No. 148

Customer Frigidaire Corp. Class No. 1

Street and No. Taylor St. Business Refr.

Town Dayton State Ohio

Person Interviewed E. T. Barney Title P.A. Buyer Title

Products Used	Normal Purchases	Grade	Price	Plan	F. O. B.	FROM WHOM	Approximate Consumption Next 12 Mos.	In Market Again
SOLVENTS								
SOLUTIONS		Eng. Dept. - Fred Payne						
LACQUERS						Al Kline		
		Standards Dept. - Fred Chase						
THINNERS								
BR. LIQUIDS		CC: C.R.E.Merkle						
PX ENAMEL		E. J. Kadlec						
		J. G. Armstrong						
PX PRIMERS & UNDERCOATERS		D. J. O'Connor						
		G. D. Armstrong						
BR. POWDER		T. P. Burns						
READY MIXED		Phila. 1						
VARNISHES								
PASTE PAINTS								
OIL ENAMELS								
PV PRIMERS & UNDERCOATERS								
SYN. ENAMELS								
SYNTHETIC UNDERCOATS								
BLACK JAPANS								
MAINTENANCE								

DRIVE ACCOUNT

SPECIAL ATTENTION - PLEASE

1605

INDUSTRIAL SALES TRADE REPORT
E. I. DU PONT DE NEMOURS & COMPANY, Inc.

1 Give information relative to competitive activies:
(a) Why does customer or prospect buy from competitors (quality, service and price, etc.)?
(b) Additional competitive information:

2 (a) At what percentage of capacity is customer or prospect operating?
(b) What is their business outlook.

3 List names and titles of persons to receive mailings.

REPORTS ON CALLS MUST BE RENDERED ON BASIS OF:
(a) PURPOSE OF CALL
(b) RESULTS OF CALL
(c) ACTION NEEDED

Rec'd & Typed 7/19/39 jm

(A) General.

(B) 1. Mr. Barney was surprised at price reduction of "Dulux" Enamel.

2. Color Tint 'Dulux' Enamel
Hoped to get decision today on color. However meeting was arranged for tomorrow morning.

3. Finishing Anodized Aluminum.
Fred Payne, who returned from weeks vacation today, will go ahead with testing of 704, and 705 Line Enamel.

4. Baking Clear 'Dulux' Alum. Vehicle.
As given in my TR 745 of March 22 the use of RC-3041 was discontinued because of yellow color. Following this a sample of RK-266 was submitted in April, as of R.W. Sangers letter of April 4. RK-266 in spite of its higher solids seems to have lower viscosity than RC-3041, and as such does not spray well. Frigidaire reduced 3041 20 to 25% with #30 Union Oil Solvent and can reduce the RK-266 only 10 percent. At the same time, the RK-266 does not give as smooth an appearance after baking as does the Glidden product now in use, the Aluminum powder seems to float and form lumps or aggregates. Fred Payne thinks this may be due to the quicker set-up of the Glidden material, which gives a better appearance than RC-3041 or RK-266.

- over -

6293

Also during this period Frigidaire have tried out a Forbes product, which gave a yellowish cast the same as RC-3041.

Fred Payne asks whether the solvents of RK-266 could be modified to give a quicker set up or whether this is the answer.

Since this material is used on the drawers of Electric Ranges, durability does not seem to be much of a factor and the principal problem is to get the drawers by the Frigidaire Inspection Department.

(C) Action - See B-4

1. As the question now stands, this business has been lost since March and is held by Glidden. I do not know whether the Phila. lab. could revise RK-266. The volume is 1500 to 2000 gal. annually, orders 200 to 400 gallons.
2. Please send me gallon 75[illegible] line ite for Frigidaire to try on Bakelite. Need not be tinted to Frigidaire color.

Defendant's Exhibit (DP) No. 342

[redacted]

(1) Purpose of call.
(2) Results of call.
(3) Action required.

Rec'd 9/20/40 Typed 9/23/40

(A) General.

(B) 1. Sending under separate cover to A. D. Dick two spray panels, one showing a spray baked enamel used on commercial refrigeration, and the other the same enamel but with a lacquer top coat used as a finish on the enamel. Both products are now supplied by K & S, the latter at about a dollar a gallon.

Please advise if we have a "Duco" to match in gloss and color the baked enamel. This would presumably be 26[illegible],218, or similar line. If so, please send us quart sample. Annual usage is about 2000 gal. with individual orders of 200 to 300 gallons.

cc: C. E. [illegible]
L. [illegible]
J. [illegible]
R. [illegible]
P. [illegible]
Phila.
R. [illegible]

DRIVE ACCOUNT
SPECIAL ATTENTION - PLEASE

4093

6295

INDUSTRIAL SALES TRADE REPORT
E. I. DU PONT DE NEMOURS & COMPANY, Inc.

EXCERPT FROM FINISHES DIVISION CALL REPORT
DATED SEPTEMBER 18, 1940

(A) General.

(B) 1. Sending under separate cover to A. D. Dick two gray panels, one showing a gray baked enamel used on commercial refrigeration, and the other the same enamel but with a lacquer top coat used as a patch on the enamel. Both products are now supplied by K & S, the latter at about a dollar a gallon.

Please advise if we have a "Duco" to match in gloss and color the baked enamel. This would presumably be 267,218, or similar line. If so, please send me quart sample. Annual usage is about 2000 gal. with individual orders of 200 to 300 gallons.

Defendant's Exhibit (DP) No. 343

6297

Western Sales Office
2100 Elston Avenue

E. I. du PONT de NEMOURS & COMPANY
INCORPORATED
CHICAGO, ILL.

Finishes Division

Chicago, Ill.
January 8, 1940

GIBSON REFRIGERATOR CO.,
GREENVILLE, MICH.

FRIGIDAIRE DIV.
GENERAL MOTORS CORP.,
DAYTON, OHIO

In regard to Mr. Jack's request that we forward for his test a sample of the clear lacquer being used by Frigidaire, on the tinned evaporator parts, we received this morning the following wire from Mr. Cook, which is self-explanatory:

"YOUR LETTER JANUARY FIFTY UNFORTUNATELY LACQUER REFERRED TO BY JACK OF GIBSON IS NOT DUPONT WE HAVE BEEN TRYING UNSUCCESSFULLY TO GET THIS BUSINESS FOR SEVERAL YEARS UNDER NAME COIL LACQUER LAST SAMPLE SUBMITTED J1100x2498 HAS BEEN WAITING TEST SINXE LAST SUMMER AND IS OUR BEST GUESS AT DUPLICATION OF PRICE AND QUALITY OF COMPETITIVE LACQUER WHICH IS REDUCED ONE PART LACQUER TO EIGHT PARTS SPECIAL DIPPING DU PONT THINNER 3504."

Inasmuch as the material involved is not a du Pont product, we are not taking action at this time. However, it

might be that you would want us to submit a sample of J-1100-x-2498 with 3504 Thinner for Mr. Jack's test at this time rather than wait until Frigidaire have completed their test of this material. Please advise what action you now desire.

L. C. STREETER
ADD
BY: A. D. DICK

ADD:EF

Mr. Cook—Thanks for getting this information to us today.
ADD

NOTE: "CC R. M. Cook" at top is encircled with pencil. An irregular line is drawn through "Mr. C. J. Linahan." The letter is signed with the initials "ADD." A check mark appears through the initials "ADD" at bottom of the letter.

2
E

Defendant's Exhibit (DP) No. 344

62299

October 3, 1940.

MR. G. A. BIESECKER:

CHICAGO OFFICE INDUSTRIAL WEEKLY REPORT
FOR THE WEEK ENDING OCTOBER 2, 1940

* * * *

7. IMPORTANT COMPETITIVE DEVELOPMENTS:

For the past two or three weeks Frigidaire have been making a production run with Lowe Brothers Primer and Enamel. We have just learned that Frigidaire experienced serious trouble with the competitive primer and had to discontinue its use before the competitive run was completed. We have made a rush shipment of "Dulux" Primer to the customer which they will use under the Lowe Brothers enamel until all competitive enamel on hand has been used up. As soon as this is accomplished, Frigidaire will return to the use of "Dulux" Primer and Enamel 100%. We do not as yet have any details of the trouble they experienced with the competitive primer.

* * * *

L.C. STREETER

4097

E

Defendant's Exhibit (DP) No. 345

6300

CC: JOHN D. O'DONNELL
R. N. SANGER
H. E. LACKEY

Cleveland 14, Ohio
March 17, 1947

MR. J. B. BULLETT
MR. C. R. E. NERKLE

FRIGIDAIRE DIVISION

Recently two men from the Philadelphia Laboratory visited Frigidaire, and while in Dayton discussed with Messrs. Sanger and O'Donnell the possibility of refrigerator companies using a wash coat over the Bonderite before priming. They felt that a procedure of this type might increase the humidity cabinet resistance.

As your [sic] probably know, this office has been doing considerable promotion work on DULUX for food compartments with Frigidaire, Westinghouse and Crosley. Westinghouse and Crosley are very interested in the use of DULUX on food compartments and will make the switch if Frigidaire will. Last week we had a meeting with Mr. Schweller of Frigidaire, who is interested in starting laboratory tests on DULUX finishes for food compartments. If the tests look satisfactory, he has agreed to finish 200 food compartments in DULUX. It is our plan to offer 764-042, 67-923, and 704-23780 abrasion resistant DULUX.

Mr. Schweller feels that if a wash coat applied by spray, or preferably dip, over the Bonderite would increase the humidity cabinet resistance of the final finish, he would be interested. This would be a definite asset in our favor.

I would appreciate your reviewing this problem and

4093

letting me know the very best system that we can offer and any alternate systems that Frigidaire should test.

W. E. KREUER

NOTE: The initials "R N S," with a line drawn through them, appears in the upper left corner. The initials "W E K" appear in the upper right corner. Under the date line is written "Fisher 4/1" and it is crossed out with pencil. A check mark appears above "Frigidaire." The words "File Copy" appear diagonally across the letter.

Defendant's Exhibit (DP) No. 346 6302

EXCERPT

Trade Report Covering Visit of John D. O'Donnell to Frigidaire on August 1, 1950.

• • • •

R.N. Sanger and R.O. Sellars called here with the writer today.

1-A. Dulux food compartments presentation.

1-B. Mr. Sanger presented the Dulux food compartment story to all men listed opposite with the exception of S.N. Schweller who unfortunately was not able to be with us being tied up in preparation for the visit of the president of General Motors Corp. tomorrow. We all agreed this story was presented to a sufficient number of key people of Frigidaire who accepted our presentation as a well organized story. However, as we have always known Frigidaire to be the most porcelain conscious refrigerator manufacturer, they told us very definitely that this presentation would have no effect on their plans to continue making all interiors of porcelain as well as all inner door pans, as soon as feasible. We suggested that as there is a growing interest in painting food shelves, we wanted them to know that the same finish would be recommended today for painting food shelves as for the food compartments and they agreed that this presentation gave them reason to [be] encouraged should they at any time decide to put out any painted shelves.

• • • • •

NOTE: Word in brackets is omitted in original.

E

4100

Defendant's Exhibit (DP) No. 348

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
FABRICS & FINISHES DEPARTMENT

6303

Dayton, Ohio,

April 1, 1940.

Mr. L. C. Streeter, Chicago. FRIGIDAIRE

DULUX FOR INNER LINERS

This follows up my recent letter concerning the possible use of Dulux on inner liners. E. J. Barney telephoned me at Philadelphia last Thursday morning that he had discussed this question with R. B. Newill, Asst. G. M., and that Mr. Newill's opinion was, so far as Frigidaire's policy was concerned, that they would be very much opposed to the use of Dulux for this purpose, that they would fight it with every facility at their command, including advertising to show the advantage of Porcelain over Dulux, and also that they would take this question up with N. E. M. A.

R. M. Cook

4101

Defendant's Exhibit (DP) No. 349

6304

SUMMARY

REFRIGERATOR, WASHING MACHINE AND STEEL KITCHEN CABINET MEETING

BISMARCK HOTEL — CHICAGO

NOVEMBER 10, 1944

INDUSTRIAL FINISHES DIVISION

. . . .

2. Food Compartment Finishes
Home and Farm Freezer Finishes

Dr. Gowing's paper stated a strong case for the use of "Dulux" on food compartments of domestic mechanical refrigerators. The standard two-coat "Dulux" systems were recommended with the mar resistant system receiving a preferential rating. The same systems were offered for use on the interior of home and farm freezer cabinets but with the stipulation that they be applied on Bonderited zinc coated metal.

All customers who expressed an opinion were in agreement that "Dulux" could be used satisfactorily on the food compartments of domestic refrigerators. Mr. VanDerau of Westinghouse stated that during 1935 they used our 104-Line system on the food compartments of 10,000 four cubic foot refrigerators without the use of a grill or hydrator to protect the bottom. No complaints have been received on the finish performance. Mr. Money pointed out that Crosley used our 704-Line system on several thousand interiors during 1938 without complaint. Ice refrigerator manufacturers have used "Dulux" on several hundred thousand food compartments without complaint.

In spite of this overwhelming backlog of favorable data, no one manufacturer is willing to replace porcelain with "Dulux" because of the selling tactics which have been employed by their competitors, and which would be repeated in all probability. "Dulux" will not be used extensively for this purpose until the majority of the leaders in the field agree upon its adoption. It is not likely that Frigidaire and Kelvinator can

be persuaded to quit porcelain, but there is some hope that

Westinghouse, General Electric, Crosley, Gibson, and Norge will agree on the use of "Dulux". A calculated saving of 50¢ to $2.50 per cabinet, depending upon porcelain costs in various plants, will accrue with the use of "Dulux". Mr. VanDerau stated that the savings would be even higher than estimated by many because the baking of "Dulux" will not distort the liner as in the case of porcelain, which would eliminate the cost of hand fitting of shelf slides with shims. He contends "Dulux" is a "natural" for the job.

Mr. Sosey of Seeger claims that very little would be saved by using "Dulux" in place of porcelain on the interior of home and farm freezers. Mr. VanDerau took firm exception to Mr. Sosey's statement on the basis that the dimensional variation with porcelain coated liners would create an untenable labor cost in the alignment of various compartments and the slides for shelves and baskets.

• • • •

Defendant's Exhibit (DP) No. 351

Form PP 3760-A

Finishes Division

Salesman R. W. Cook Date 1-23-42 Report No. 25

Customer Frigidaire Corp. Class No. 1

Street and No. Taylor St. Business Refrig.

Town Dayton State Ohio

Person Interviewed E. J. Barney Title P.A. Buyer Title

Products Used	Normal Purchases	Grade	Price	Pkg.	F.O.B.	FROM WHOM	Approximate Consumption Next 12 Mos.	In Market Again
SOLVENTS	CC:	J. G. Armstrong						
		E. J. Kadlac						
SOLUTIONS		R. O. Sellars						
LACQUERS		C. R. E. Merkle						
		M. A. Dibble						
		O. J. Spawn						
THINNERS		Phila 2						
BR. LIQUIDS								
PX ENAMEL								
PX PRIMERS & UNDERCOATERS								
BR. POWDER								
READY MIXED								
VARNISHES								
PASTE PAINTS								
OIL ENAMELS								
PV PRIMERS & UNDERCOATERS								
SYN. ENAMELS								
SYNTHETIC UNDERCOATS								
BLACK JAPANS								
MAINTENANCE								

4105

INDUSTRIAL SALES TRADE REPORT
E. I. DU PONT DE NEMOURS & COMPANY, Inc.

1 Give information relative to competitive activities:
(a) Why does customer or prospect buy from competitors (quality, service and price, etc.)?
(b) Additional competitive information:

2 (a) At what percentage of capacity is customer or prospect operating?
(b) What is their business outlook.

3 List names and titles of persons to receive mailings.

REPORTS ON CALLS MUST BE RENDERED ON BASIS OF:
(a) PURPOSE OF CALL
(b) RESULTS OF CALL
(c) ACTION NEEDED

Received and typed 1-26-42. PG

A. General.

B. Production.

Refrigerator production continues at about 1500 cabinets per day, 7500 per week - 6000 "Dulux" and 1500 Porcelain. No information available as to how long this may continue. A meeting is to be held in Washington January 26th after which some information may be available.

C. None.

6307

Defendant's Exhibit (DP) No. 356

6313

OR-6303

DUPONT

SALESMAN'S TRADE REPORT

RUBBER CHEMICALS DIVISION

CANARY — RUBBER LABORATORY
BLUE → WILMINGTON SALES
GREEN — SALESMAN'S COPY
PINK — PRODUCTION & ANALYSIS
GOLDENROD — TRADE RECORD
FIRST WHITE TISSUE — RUBBER LABORATORY

SALESMAN S. W. McCune, III BRANCH OFFICE Wilmington MILL CALL No. REPORT No. 1

CUSTOMER General Motors - Chevrolet Div. CALL DATE 1/11/50 WRITTEN TYPED 1/20/50

ADDRESS Gear & Axle Plant CITY Detroit CLASS PER CENT CAPACITY STATE Mich.

INTERVIEWED

SAMPLES OR LITERATURE

COPIES TO		ACTION BY
☐	C & C	☐
☐	AKRON	☐
☐	BOSTON	☐
☐	CHICAGO	☐
☐	LOS ANGELES	☐
☐	NEW YORK	☐
☐	SAN FRANCISCO	☐
☐	RAK	☐
☐	CAB	☐
☐	SGB	☐
☐	WAK	☐
☐	VAC	☐
☐	AHW	☐
☐	CEM	☐
☐	DBF	☐
☐	HHA	☐
☐	LSB	☐
☐	MFT	☐
☐	NLC	☐
☐	EXPORT	☐
☐	(2) C.I.L.	☐
☐	JBL	☐
☐		☐

IMPORTANT PLEASE REPORT ON THE FOLLOWING SUBJECTS IN THE ORDER GIVEN: 1. ACCELERATORS; 2. ANTIOXIDANTS; 3. PEPTIZING AGENTS; 4. COLORS; 5. RETARDERS; 6. MISCELLANEOUS CHEMICALS; 7. NEOPRENE; 8. NEOPRENE LATEX; 9. GENERAL INFORMATION.

Called with JBL

Called here to discuss with Mr. Zuel the requirements for rear axle seals. He told us that Chevrolet made no attempt to specify the material used in the manufacture of axle seals and judged their suitability solely on the basis of a performance test. He suggested that if we were interested in developing a neoprene composition for use in automotive rear axle seals that we work closely with the seal manufacturers. He told us that Chevrolet's principal suppliers of those seals were: Victor Manufacturing & Gasket Co; Chicago Rawhide Manufacturing Co.; National Motor Bearing Co., Inc.; Michigan Leather Co. At the present time Chevrolet is not buying any seals from

Defendant's Exhibit (DP) No. 352

6308

EXCERPT

Trade Report Covering Visit of John D. O'Donnell to Frigidaire on September 14, 1950.

• • • •

1950 Production

Refrigerators—1,011,358—(938,737 — "Dulux"
(72,621 — Porcelain
Ice Cream Cabinets — 51,288 — "Dulux"
Home Freezers — 35,032 — "Dulux"
Water Heaters — 40,682 — "Dulux"
Electric Ranges — 265,949 — All Porcelean
Automatic Washing Machines — 113,545 — All Porcelean

• • • •

E

4105

Defendant's Exhibit (DP) No. 357

V. M. G. 63314

MAR 12 1940

5-6-40
5-6-40
jas

ORIGINAL—MAIN OFFICE COPY

SALESMAN'S REPORT

Salesman J. H. Norton Agency Wilmington Date 2-27-28-40 Report No. 78

Firm Chrysler Corp. Mill Call No.

No. and Street Engineering Div. City Detroit, State or Province Mich.

Interviewed W. J. MacCartney J. Hendrick Title Ch. Chem. Compounder

Percentage of Mill Activity

Competitive Product in Use (or Quoted)	Competitive Seller	Price	Next in Market	Approx. Annual Consumption	Corresponding du Pont Product	Quoted
J. Dudley	Compounder			90	V.I.C.	
R. Wheeler	"				M.H.A.	
					Dr. Dales	

SGB VAC
CAB ALL
ERB AFC
FILE RHS

List in This Block All Samples and Literature Forwarded

DISCUSS WITH

RETURN TO

List in This Block All Matches Forwarded

In addition to the information regularly reported in the body of the Trade Report, replies to the following specific questions should be made. Answers may be tabulated by number.

1. What technical problem should be investigated, or what other service do you desire for this firm prior to your next call?
2. Is an increase or decrease expected here in the consumption of any particular item?
3. What new competitive products are appearing on the market at this point?
4. Has any situation developed of interest to our Credit Department?
5. Is there any information of interest to another Department of the Company?

REMARKS:

Called with D.F.F.

Defendant's Exhibit (DP) No. 353

C O P Y

6309

cc: SGB
SLW
J. A. Turner, Mgr.
For: R. L. Heints

April 12, 1949

TO: JBL

FROM: SWM

Pontiac Motor Co.
Radiator Hose

RAK has reported that Pontiac are interested in using GR-I in the construction of radiator hose and have asked Thermoid for quotations on a product of this type.

Since other car manufacturers are using neoprene radiator hose and believe that it is worth while, we would like to demonstrate to Pontiac that neoprene will make the most serviceable product. To accomplish this, we will need samples of radiator hose constructed from GR-I and neoprene. Do you believe that Lampman would be willing to furnish samples of hose for such a test or had we better obtain samples from some other source and present to him the results of any tests that we make as an accomplished fact. Any further information which you may have will be of help in setting up this program.

SWM/jes

Note: "FILE COPY" is printed across the face of the document.

EXCERPT FROM DEVELOPMENT REPORT OF THE RUBBER CHEMICALS DIVISION DATED MAY 15, 1950

"Potential Markets for Neoprene in Hose

"Neoprene is now being used by practically every hose manufacturer in certain types of hose. However, a review of manufacturers' catalogs and literature on hose has revealed that neoprene is not yet being used in all types of hose in which its properties are advantageous.

"The types of hose in which we believe that neoprene should be more widely used are as follows:

1. Air Hose (quarry, mine and compressor types)

2. Universal Hose

3. Automotive Radiator and Heater Hose

4. Garden Hose

"Neoprene is now used in the inner tubes of most types of air hose and in the outer covers of premium grades of air hose. There is a field for expansion in the use of neoprene in the covers of hose designed for use in mines and quarries and in the covers on compressor hose.

"Electric Hose and Rubber Company, who pioneered the development of a universal or all-purpose hose which can be used for conveying oil, water or gases, have equipped their product with a high quality neoprene cover and have demonstrated that neoprene tubes give adequate performance in all types of service. Other manufacturers are introducing a universal type of hose. They are equipping their hose with neoprene covers, but some of them are using tubes made of a Buna N composition.

"Automotive radiator and heater hose, constructed of neoprene, is being used as standard equipment by Chrysler and Ford. Their experience in using this hose has demonstrated advantages for neoprene which justify its higher cost. Other automobile manufacturers, who are now using hose made from Butyl rubber, GR-S and reclaimed rubber claim that this hose is adequate for their purpose.

4108

"All of the principal manufacturers of garden hose, except Goodrich, are offering high quality garden hose equipped with a neoprene cover. Plastic hose continues to be a strong competitor for neoprene in this field.

"We are making every effort to demonstrate the advantages of neoprene in these types of hose in order to more firmly establish our position in this field." (pp.3-4)

Defendant's Exhibit (DP) No. 355

OFFICE TRAIN REPORT

S. W. McComs III — Wilmington — 2-8-45

General Motors Research Laboratories — Detroit, Michigan — 6312

Mr. R. K. Williams

To: J. A. Turner, Mgr.
Chicago Office
For: S. L. Weller

Wil. - VAC

Interviewed with MLC, VAC, WHK, HHA, and AMH.

Williams visited the Laboratory to inspect our equipment and discuss new developments as they apply to his problems.

General Motors is interested in developing an adhesive similar to Chrysler's Cycleweld. Williams has been experimenting with mixtures of various resins with neoprene, but has been unable to make a stable solvent cement containing neoprene and a phenolic resin. He has tried various solvent mixtures, but has not been able to produce a satisfactory material. Several suggestions were made, including the use of the unreacted resin components in the cement and to form the resin at the time the bond is made. HHA reviewed some of the work that has been done on latex-resin mixtures.

Williams pointed out that one of the drawbacks of neoprene products was the high compression set of neoprene. We told him that it was possible to compound low set neoprene stocks by using the proper type of neoprene and the right compound and cure. Gave Williams recipes for low set stocks of GR-M and Neoprene Type FR in a 65-70 durometer range.

VAC brought up the subject of oil resistant applications and asked Williams whether there were many automotive applications where dimensional stability during oil immersion was actually necessary. Williams gave several examples and stated that General Motors would not use neoprene in resilient applications where oil resistance was the primary requirement. We discussed the comparative properties of neoprene with blends of Buna N and GR-S, and the methods which could be used to make sure that neoprene was being supplied when desired. Williams pointed out that at present it was not General Motors' policy to specify neoprene products, as such, but rather to describe the physical properties of the vulcanizate desired and leave it up to the supplier to choose neoprene or some other material.

We showed Williams through the Laboratory. He was particularly interested in the equipment we used to evaluate neoprene in resilient mountings.

SWM/ml
2-10-45
2-10-45

6110 E

☐	DBF	☐
☐	HHA	☐
☐	LSB	☐
☐	MFT	☐
☐	NLC	☐
☐	Export	☐
☐	(2) C.I.L.	☐
☐	JBL	☐
☐		☐

Called here to discuss with Mr. Zauel the requirements for rear axle seals. He told us that Chevrolet made no attempt to specify the material used in the manufacture of axle seals and judged their suitability solely on the basis of a performance test. He suggested that if we were interested in developing a neoprene composition for use in automotive rear axle seals that we work closely with the seal manufacturers. He told us that Chevrolet's principal suppliers of these seals were: Victor Manufacturing & Gasket Co; Chicago Rawhide Manufacturing Co.; National Motor Bearing Co., Inc.; Michigan Leather Co. At the present time Chevrolet is not buying any seals from Michigan Leather which probably accounts for the interest shown by Herman Boxser in the development of a superior compound for use in rear axle seals. The Acadia Synthetic Products Division supplies the rubber parts which Michigan Leather use in the fabrication of their seals.

During a discussion of the properties of various types of commercial lubricants, Zauel told us that the lubricant used in the rear axle of Chevrolet passenger cars was identified by General Motors Specification 4655 and the lubricant used in Chevrolet trucks was identified by General Motors Specification 4735. Zauel stated that the latter specification described Elco 2 hypoid lubricant.

Zauel took us to the plant and showed us the bonded brake lining operation which was being used at the particular unit. He stated that four such units are now in operation at Chevrolet plants and that these four units produce all of the brake shoes for Chevrolet cars. A thermal setting adhesive, supplied in dip form by Goodrich, is used in bonding the brake lining to the metal shoe. The shoe is first protected from corrosion by the application of a varnish. This is followed by the application of a priming cement to the surface of the shoe. The adhesive is then applied to the surface of the shoe and the whole assembly is cured under pressure at elevated temperature. After curing, each brake is tested by applying a load of 4,000 pounds in shear on the bond between the lining and the shoe. Every shoe is also subjected to a hammer test in order to make sure that the lining is bonded on firmly over the surface of the shoe. It is believed that the adhesive used in bonding these brake linings is a phenolic one which has been modified by compounding with a Buna-N Type of synthetic rubber.

In addition to the information regularly reported in the body of the Trade Report, replies to the following specific questions should be made. Answers may be tabulated by number.

1. What technical problem should be investigated, or what other service do you desire for this firm prior to your next call?
2. Is an increase or decrease expected here in the consumption of any particular item?
3. What new competitive products are appearing on the market at this point?
4. Has any situation developed of interest to our Credit Department?
5. Is there any information of interest to another Department of the Company?

REMARKS:

Called with D.F.F.

D.F.F. had been requested to return to assist in solving two problems. The first concerns the universal joint boot. Hendricks has swung to the belief that neoprene would be satisfactory because recent tests results of which were reported last week, show that neoprene will not get brittle after 2 weeks at -40° F. If Chrysler approves, Universal Products Co. is willing to use neoprene despite their poor experience with the old neoprene-leather construction. After a discussion with Gardner, local representative for Chicago Rawhide, it was decided to telephone Koeliker, chief chemist, in Chicago and recommend he try two neoprene formulas. These formulas will be reported by D.F.F. who will confirm them by letter. This is an extremely important problem because it involves from 1000 to 2000 lbs. of neoprene per operating day and because Perbunan is favored for this produce. If we can solve the problem and get neoprene into production, it will be the first large-sized neoprene part going into automobiles as original equipment.

The other problem for D.F.F. concerns a neoprene latex coating for cork gaskets. This job will involve a fair volume of neoprene latex, but will be temproary only. Most of the latex will be furnished through Michigan Latex Co. although purchases may be made at any of the three sources of supply—Chicago Rawhide, Felt Products or Detroit Gasket. The reason the need is expected to be only temporary is because the lignin-neoprene combination is expected to replace the coated cork in a few months.

McCortney is still very anxious to discuss this lignin-neoprene development with

E.R.B. He believes it will be to our advantage to have this discussion in Detroit because E.R.B. can see all developments at first hand. While original work looked dubious, the recent developments appear to be highly successful. Amount of neoprene involved should reach close to 1 million pounds per year.

Wheeler has charge of cements and adhesives. Recently he has been handed Bagley's sound dampener. This product is acceptable, but it dries a little too slowly. Told Wheeler about the early development of this product and why it was necessary to use Zenite and Neozone D as part of the compounding material.

Defendant's Exhibit (DP) No. 358

ORIGINAL—MAIN OFFICE COPY

CAB-Wil.
Wil.
JEN

SALESMAN'S REPORT

Salesman D. F. Fraser Agency Wilmington Date 7/22/40 Report No. 28

Firm Chrysler Corp. Mill Call No. 4

No. and Street City Detroit State or Province Michigan

Interviewed W. J. McCortney
J. Hendrick Title Percentage of Mill Activity

Competitive Product in Use (or Quoted)	Competitive Seller	Price	Next in Market	Approx. Annual Consumption	Corresponding du Pont Product	Quoted
J. Dudley				EAH FPM To: E. L. Miller, Mgr., Chicago Office For: S. L. Weller EHK C.A.Lee, Box 10, Montreal, Canada, C.I.L.		

SGB VAC
CAB HLL
ERB AFG
FILE RMS
DISCUSS WITH
RETURN TO

List in This Block All Samples and Literature List in This Block All Matches Forwarded

In addition to the information regularly reported in the body of the Trade Report, replies to the following specific questions should be made. Answers may be tabulated by number.

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2. Is an increase or decrease expected here in the consumption of any particular item?
3. What new competitive products are appearing on the market at this point?
4. Has any situation developed of interest to our Credit Department?
5. Is there any information of interest to another Department of the Company?

REMARKS.

Called with JEN.

Dudley

Delivered another sample of compounded neoprene latex for veneering work. Dudley reports that they are definitely interested in the possibilities of neoprene veneered window stripping and grommets. To date better appearing products have been made with neoprene latex than with Type KC cement. The Type KC cements have an advantage in that self-curing cements could be used. Dudley wanted to know if we would provide the cement and accelerator separately. Told him that we might eventually do this but for the time being would prefer adding the accelerator when the cement was made up. He is going to send me twelve gasoline tank filler neck grommets, half of which are to be coated with latex and the remainder with cement. When they are returned he

6317

55A214

Pale Crepe	100.
Altax	1.
Guantal	.8
Hiflex B	1.
Zinc Oxide	8.
P-33	20.
Laurex	2.
Sulfur	2.5

Cure: 15 minutes at 275°F.

(I reminded him that this stock would cause any self-respecting du pont salesman to take to drink.)

Hendrick

Tests on Type I are still under way. In connection with the blue sheet describing Type I, Chrysler seemed to be more impressed with the claims for freeze resistance than anything else. Told Hendrick that this was determined under only one set of conditions and for their purposes they would probably find Type GN to be more freeze resistant than Type I. I was shown several samples under test from Manhattan that had been submitted as freeze resistant compositions. They appeared to be withstanding the Chrysler freeze test successfully. Hendrick inquired about our commercial situation on Type I. He told me that Standard Products had been removed from the list as a source of supply for gaskets covered by Spec. M.S. 1616. (Presumably because their supply of Perbunan has become exhausted). General Rubber has replaced Standard Products. Hendrick is anxious to get the latter concern back on the list and the only way they can do it would be to use Type I. Told Hendrick that Type I compositions should meet M.S. 1616 by a wide margin. I promised to develop compounds to meet the specification and send the results to him. About 5,000 units are used per day.

The universal joint boot is being released to production. This neoprene part will probably be molded by Goodyear. As far as Hendrick can see this part will remain in production unless some new political angle concerning the spline drive unit crops up.

No neoprene problems have been encountered so far on the new transmission design.

The next part for neoprene consideration is the proposed thermostat unit. Conventional metal bellows thermostats cost from 24-32¢ each. A design using a flexible rubber bellows has been proposed. Such a unit should cost less than 5¢. The unit consists of a flat brass disc approximately 2½" dia. On this sits a hemispherical shell of rubber. The edges of the disc are peened back on the rubber to effect a seal. The copper tube connected to the thermostat by-pass valve is attached to and through the vertex of the rubber shell. By means of the tube the air is exhausted from the shell and 1 c.c. of ethyl alcohol introduced. The tube is then crimped to prevent loss of the alcohol vapor. This unit will be cheaper than the metal bellows thermostat and in addition is just as, or more, responsive to temperature changes.

The difficulty so far has been with diffusion of the alcohol vapor through the rubber shell. (The rubber is reinforced on the outside with two layers of balbon cloth.) Perbunan was being tried during my visit. I said that neoprene should be much better than rubber as far as diffusion was concerned. In addition neoprene is not swollen by polar

6318

solvents to the same extent as Perbunan. Promised to run diffusion tests of alcohol through neoprene and rubber and to report the results to Dudley. If this part goes to neoprene a nice volume will result.

Crampton reported that Type GN produced lower set compounds than any other type but it was too unstable to use. Investigation showed that he was not using any Latac or other chemical plasticizer in his compounds.

No one at the Rubber Laboratory knew the type of oil used in the Fluid Drive mechanism. Referring to the specifications Hendrick found that the following were the approved sources of supply:

Standard Oil of New Jersey - Stanco #145R
Socony Vacuum Oil Co. - #414 Indiana White Oil.

Hendrick kindly provided me with all the Chrysler specifications covering synthetic rubber parts. The tabulation appearing below lists these specifications by number and title. The approved sources for each part are shown in the last column. Those specifications marked x may possibly be changed; those marked xx will be changed. In most cases the changes will be concerned with the time and temperature of test conditions in an attempt to standardize on the tests.

Special Note to Salesmen:

By means of copies of this trade report this list is being sent to the interested salesmen for information regarding the source of supply of the various parts. Naturally this information is to be considered as confidential and the fact that we are in possession of the specifications should not be divulged to your customers. In most cases the specifications list the rubber company's compound number or designation.

We have developed compounds to meet some, but not all, of the specifications.

Chrysler Specifications:

	Number	Title	Composition	Supplier
	MS 230	Radiator Hose	Tube - R or S Cover - R	1-2-3
x	667	Vacuum cylinder hose	A. ½" hose Tube - S Cover R or S	4
			B. Larger than ½" Tube - S Cover - S	6
xx	669	Bearing oil seal rubber	R	4-5
x	826	Oil and gasoline hose	Non-metallic tube S Metal lined tube R Metallic tube	4 4-7-8 7-9-10-11

(R = rubber)
(S = synthetic)

4116

Number	Title	Composition	Supplier
988	Exposed rubber parts coated with lustrous finish	R	2-3-12-13-14
1119	Radiator hose - very flexible	Tube - R Cover - R	2-4
1306	Hose - gasoline tank filler tube flexible construction	Tube - S Cover - R or S	2-3-4-8-15-16
1345	All rubber hot water heater hose	R	12-1-8-17
1417	Seals - oil - molded synthetic rubber - very stiff	S	18
1425	Gasket and washer stock oil resisting - medium hard	S	12-4-20-14-13-21-8-2-22-3-23-24
1446	Gasket and washer stock oil resisting - stiff	S	12-20
1476	Hot water heater hose - fabric reinforced	Tube - R Cover - R	2-3-25-26-14-8
1480	Seals - oil or grease molded synthetic rubber - medium soft	S	12-8-2-6-4-14-22-27-19-28-29-23
1497	Gaskets for refrigerating Freon compressors asbestos	S	8-30
1525	Oil hose - snythetic rubber	Tube - S	7-9-11
1585	Synthetic rubber coated gaskets Chipboard base	S	31-32-33
1586	Synthetic Rubber coated gaskets Manila lined chipboard base	S	31-32-33
1587	Synthetic rubber coated gaskets Fibre board base	S	31-32-33
1616	Seals and gaskets - synthetic rubber - inside cooling system - medium soft	S	2-13-15
1620	Tubing - synthetic rubber - non-tarnishing of copper	S	8-34-35-12
1626	Seals - oil or grease - extruded synthetic rubber - medium soft	S	8-2-19-4-14
1641	Seals or gaskets - synthetic rubber - inside cooling system stiff	S	2-36
1666	gasket - stiff ligno-neoprene synthetic rubber	S	

Number	Title	Composition	Supplier
1675	Gasket - synthetic rubber - soft	S	18-8-2-19-4
1683	Synthetic rubber coated gaskets vulcanized fibre base	S	Fibre 37-38 Coating 31-38-33 Gasket 39-40-41
1691	Seal - synthetic rubber and fabric - crankshaft bearing	S	42.
1701	Gasket - medium hard ligno-neoprene synthetic rubber	S	
1704	Gasket - gasoline sealing - medium hard	S	43-44
1768	Gasket - synthetic rubber coated cork	S	45-39
1773	Boot or diaphragm material - synthetic rubber - extreme cold resistance	S	2

Suppliers

1. Firestone
2. Goodyear
3. Thermoid
4. Manhattan
5. Miller
6. Inland
7. Flex-O-Tube
8. Goodrich
9. Weatherhead
10. Titeflex Hose
11. Columbia Products
12. Dryden
13. General
14. U. S. Rubber
15. Goodyear (Canada)
16. Dunlop (Canada)
17. Industrial Rubber Goods
18. Chicago Rawhide
19. Griffith (Canada)
20. Western Rubber
21. Toledo Industrial Rubber
22. Corduroy
23. Firestone (Canada)
24. Dominion (Canada)
25. Boston Woven Hose
26. Gates
27. Baldwin
28. Stokes Rubber (Canada)
29. General Rubber (Canada)
30. Raybestos
31. Minnesota Mining & Mfg. Co.
32. St. Clair Rubber
33. O'Day Co.
34. Johnson Rubber
35. Continental Rubber Works
36. Standard Products
37. Spaulding Fibre
38. Continental Diamond Fibre
39. Felt Products Mfg.
40. Vellumoid
41. Michigan Devices
42. Victor Gasket
43. Armstrong Cork
44. Detroit Gasket
45. National Machine Products

DFF:eb

Defendant's Exhibit (DP) No. 359

FORM CH-DUPT.

6321

OFFICE TRADE REPORT

REPORT OF B. L. Fraser AGENCY Wilmington DATE 10/3&4/40

FIRM Chrysler Corporation ADDRESS Detroit, Michigan.

TALKED WITH L. V. Hendrick TITLE

COMPETITIVE PRODUCT IN USE	COMPETITIVE SELLER	PRICE	TREND IN MARKET	APPROX. ANNUAL CONSUMPTION	CORRESPONDING DU PONT PRODUCT	QUOTED
	SGB / NPC				Cc: E. I. Miller, Mgr., Chicago Office	
	GAB / HIL				Fort E. L. Weller	
	EGD / AEC					
	FILE / KWS					
LIST IN THIS BLOCK ALL SAMPLES AND LITERATURE [illegible]					LIST IN THIS BLOCK ALL MATCHES FORWARDED	
	RETURN TO					

REMARKS:

Hendrick called to present an estimate of their neoprene requirements for the next three months. The data which he brought with him were incomplete and it took the best part of one day to make the necessary calculations. In its final form the table shows every neoprene part used by Chrysler together with the vendor, the unit weight, the percentage of neoprene by type and the calculated requirements per part for the last three months of this year. Three copies of the table were made. Hendrick retained one; one has been sent to [illegible] and I am retaining the last copy. Chrysler wish to keep this information confidential, mainly because it shows the estimated production of the various cars for the remainder of the year.

The total neoprene needed is as follows:

	October	November	December
Type GN	17,890	14,820	16,390
Type H	23,000	21,200	23,205
Type I	385	340	370
Type 57 Latex	180	148	206

These figures allow 20% for overflow and scrap. It is felt that the estimate is on the low side. The Type GN is used exclusively for propeller shaft boots. The Type I is an experimental production unit and the Type 57 is used for coating cork front and rear main bearing oil pan gaskets. This information, of course, must be kept confidential.

65722

Goodyear, who make the propeller shaft boot, claim that they can only supply 65% of the requirements with their present and expected stock of Type GN. This means that an additional 6,000 lbs. of Type GN per month are needed to meet the deficiency. After discussion MEB decided to release 6,000 lbs. of Type GN (additional) to Goodyear in November and December, but he could not allow them any extra GN for October. It was apparent that Chrysler are not entirely satisfied with the boots produced at Goodyear. The reasons given were that Goodyear were running a high scrap (approximately 35%) on this part and the remainder was not 100% satisfactory. In addition, Goodyear were reducing the curing time and all of Chrysler's tests have shown that a full cure is essential to meet the freeze resistance requirements of the specification. Undoubtedly, there were other reasons which were not disclosed.

This arrangement will take care of the November and December requirements but does not take care of the October needs. On Friday Hendrick phoned Chicago Rawhide and asked them if they could borrow neoprene from their reserve set aside for national defense purposes in order to take care of 35% of the October boot requirements. Koelliker said he could if he would be assured of getting the additional 6,000 lbs. of neoprene in November and December. The move prompting this arrangement was suggested by statements that Koelliker had made at Chrysler that he had a reserve bank of neoprene about which we knew nothing. This arrangement appeared to be the only one feasible which would allow Chrysler to obtain enough neoprene to supply their boot needs. The 6,000 lb. shipment during November and December will now go to Chicago Rawhide rather than Goodyear since Chicago Rawhide will have the molds. In the conversation with Koelliker it was revealed that the molds were already on the way to Chicago Rawhide. The latter arrangement was made in the absence of MEB but with the approval of CAH and SGB.

According to Hendrick Goodyear have made several energetic attempts to substitute Chemigum for neoprene in the propeller shaft boot. Because of the background with neoprene Chrysler wish to retain neoprene for this part although they will probably go to Chemigum for all or part of the remaining needs depending on how the supply of neoprene lasts.

Both Hendrick and I are very anxious to retain the propeller shaft boot business for neoprene. Should neoprene be not forthcoming Chrysler may return to the leather boot or go to the spline shaft design. In either case it will be exceedingly difficult, if at all possible, to recoup the neoprene business.

Hendrick intimated that Felt Products were to be approved as a source of supply for oil pan and gaskets (neoprene coated cork gaskets). Felt Products are using the basic neoprene latex mix which we gave them but have found that the addition of a dispersion of soya bean meal greatly improves the physical properties of the latex film.

Hendrick gave me unvulcanized samples of two types of Chemigum which I had requested during my last visit to Detroit. These have been handed to MEB for analysis. Hendrick cautioned me not to reveal the source of these samples.

Several problems on hand could not be disposed of during his visit but these will be taken up during my next visit to Detroit.

(4120)

HWT:eb
10/7/40

List in This Block All Samples and Literature DISCUSS WITH RETURN TO

List in This Block All Matches Forwarded

In addition to the information regularly reported in the body of the Trade Report, replies to the following specific questions should be made. Answers may be tabulated by number.

1. What technical problem should be investigated, or what other service do you desire for this firm prior to your next call?
2. Is an increase or decrease expected here in the consumption of any particular item?
3. What new competitive products are appearing on the market at this point?
4. Has any situation developed of interest to our Credit Department?
5. Is there any information of interest to another Department of the Company?

REMARKS.

Called with JEN.

Dudley

Delivered another sample of compounded neoprene latex for veneering work. Dudley reports that they are definitely interested in the possibilities of neoprene veneered window stripping and grommets. To date better appearing products have been made with neoprene latex than with Type KC cement. The Type KC cements have an advantage in that self-curing cements could be used. Dudley wanted to know if we would provide the cement and accelerator seperately. Told him that we might eventually do this but for the time being would prefer adding the accelerator when the cement was made up. He is going to send me twelve gasoline tank filler neck grommets, half of which are to be coated with latex and the remainder with cement. When they are returned he will subject the grommets to oxygen bomb, Weather-O-Meter, roof and road tests.

McCortney and Dudley told me that their present window stripping and quarter window frame stocks are high grade but generally contain some reclaim. Dudley will send me formulas for representative stocks which we will use as controls in our sunlight exposure tests.

For a control in low temperature tests Dudley suggested that we use their non-freezing brake cup stock.

Defendant's Exhibit (DP) No. 360

6323

FORM OP-5382 25M SETS-8-41 ☐

ORIGINAL—MAIN OFFICE COPY

OMH-Wil. V. M. G.
~~OAB-Wil.~~
VAC-Wil.
AEC-Wil.

SEP 16 1941

SALESMAN'S REPORT

Salesman D. F. Fraser Agency Wilmington Date 8/25/41 Report No. 21

Firm Chrysler Corp. Mill Call No. 5

No. and Street ____ City Highland Park State or Province Michigan

Interviewed J. V. Hendrick, W. J. McCortney Title ____ Percentage of Mill Activity ____

Competitive Product in Use (or Quoted)	Competitive Seller	Price	Next in Market	Approx. Annual Consumption	Corresponding du Pont Product	Quot
				JHN		
				HAH		
				To: J. A. Turner, Mgr., Chicago Office.		
				For: S. L. Weller		

SGB VAC
OAB HLL
ERB AEC
FILE RHS
DISCUSS WITH
RETURN TO

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4. Has any situation developed of interest to our Credit Department?
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REMARKS:

Called with JHN.

JHN asked Hendrick to confirm a rumor going around Detroit that the price of Hycar was to be dropped to 50¢ a pound during the first part of September. Hendrick said that he had been informed that the price would be dropped about that time but did not know the contemplated new price.

The primary cause of the call was to discuss the flexing results on the fluid drive vacuum pump diaphragms which we had compounded and cured at Goodyear on August 8th. Since that time the molds were withdrawn from Goodyear and sent to

6324

Another problem of immediate concern is that of the universal joint boot. Originally this stock (Neoprene Type GN) had a tensile strength around 2,200 lbs., so the specification was written calling for a minimum of 2,000 lbs. per in.^{2} tensile strength. Since that time (over a year ago) the tensile strength has gradually decreased until now they are getting tensile strengths in the neighborhood of 1,600 lbs. per in.^{2} The actual tensile strength does not matter a great deal but Chrysler have found by experience that a lower strength stock means a poor flexing stock. There are indications that the flex life of the boot is less than that of the early production boots although no change has been made in the stock composition or mold design. This has not reached serious proportions yet but we may expect a complaint any time. I told Hendrick that we would see what we could do about this problem from the angle of selecting neoprene for this use and would work directly with Chicago Rawhide who now mold this part. This agreement was satisfactory to Hendrick and I will discuss in detail with the interested members of our laboratory.

Chrysler are going ahead with the long range research program on boots and have completed their mold to produce single convolution boots. A sample molding was brought back to check against the mold which we intend to make. Details of their proposed flexing tests were obtained and these will be discussed with FLY.

While at Chrysler I went over the various neoprene parts now in use and the places on the car where we could expect to see neoprene used. The most interesting new development is that of rear spring covers. At the present time the rear spring is enclosed in a cotton jacket and this in a metal jacket. Due to the shortage of cotton and ternplate Chrysler propose to go to a synthetic rubber jacket. This would be molded as a flat slab with thin supporting ribs and will be wrapped around the spring. It would be held in place on the spring by a metal crimp. Such a development will call for approximately 1½ lbs. of crude per car and would amount to something like 50,000 lbs. of crude per month. Hycar is favored for this application, but if we cooperate I think we can secure some or most of the business for neoprene.

On the discussion of neoprene parts I found that the following are made from neoprene.

Engine oil gauge hose
Fuel filter injector hose
Universal joint boots
Super-charger seals
Gear shift bumpers
Crank shaft rear bearing cap gasket
Fluid drive vacuum pump diaphragm
Automatic gear shift valve seat seals
Vacuum diaphragm
Exhaust pipe bracket grommet
Shock absorber seals
Ignition coil nipple (to be discontinued)
Wheel control arm pinion and bushing dust seals
Fan case cover seal
Rear main bearing seal
Front end suspension dust seal
U shackle seals
Shock absorber piston guide
Spline shaft seal

REMARKS:

Hendrick called to present an estimate of their neoprene requirements for the next three months. The data which he brought with him were incomplete and it took the best part of one day to make the necessary calculations. In its final form the table shows every neoprene part used by Chrysler together with the vendor, the unit weight, the percentage of neoprene by type and the calculated requirements per part for the last three months of this year. Three copies of the table were made. Hendrick retained one; one has been sent to [illegible] and I am retaining the last copy. Chrysler wish to keep this information confidential, mainly because it shows the estimated production of the various cars for the remainder of the year.

The total neoprene needed is as follows:

	October	November	December
Type GN	17,890	14,520	16,390
Type E	25,000	21,200	23,205
Type I	385	340	370
Type 57 Latex	180	146	206

These figures allow 20% for overflow and scrap. It is felt that the estimate is on the low side. The Type GN is used exclusively for propeller shaft boots. The Type I is an experimental production unit and the Type 57 is used for coating cork front and rear main bearing oil pan gaskets. This information, of course, must be kept confidential.

From the table it appears that the bulk of the Type E neoprene goes into front wheel dust seals, the next largest quantity going into neoprene-lignin gaskets made by Standard Products. The whole list includes forty different applications. There are other applications where they are at present using Thiokol or Chemigum.

Hendrick's chief worry was a supply of Type E for Standard Products to make the neoprene-lignin gasket and a supply of Type GN to make the propeller shaft boot. Standard Products has informed Hendrick that if we live up to our promises on Neoprene Type E they will be able to supply Chrysler's requirements of the neoprene-lignin gasket. On the other hand,

6325

Neoprene-lignin materials are used in:

Tappet cover gaskets
Valve spring cover gaskets
Axle drive pinion carrier drive gasket (or Hycar-lignin)
Oil pan gaskets
Manual remote gear shift housing gasket
Fuel gauge tank mounting gasket
Shock absorber seal gasket
Oil pan and gasket (at present made from cork covered with neoprene latex)
Hycar is used for:
Shock absorber gaskets
Axle drive pinion carrier drive gaskets and several other applications.

Thiokol is used in the gasoline filler neck tube and in the automatic shift hose lining. On trucks neoprene or Chemigum is used for the water pump by-pass elbow and radiator hose connections.

I was told that next year due to a shortage of alcohol they propose to use kerosene as an anti-freeze. In this case the three hose connections will be supplied as a replacement kit with the new cars and will also be available through parts distributors. Neoprene has been ousted from use in horn wire, ignition cable and carburetor hose. Ignition cable is now made with Vinylite tape and carburetor hose is made of metal. The gasoline pump diaphragms are made from linseed oil treated fabric.

Hendrick gave me a list of their current specifications to bring our laboratory file up-to-date. In the list below the same supplier identification has been used as that given in my Trade Report #28, July 22, 1940.

Number	Title	Composition	Supplier
MS-1306	Hose - Gasoline tank filler tube flexible connection	Tube - T Cover - R	2-15-8- 4-3-16
MS-1345	Hose - Synthetic Rubber - Hot Water Heater or By-Pass	C A N	2 8
MS-1425	Gasket or Washer stock - Molded synthetic Rubber - Medium Hard (Same requirements as MS-1830) (Shock Absorber Gaskets)	N A C S	12-8-2-4-14-46 8 2 13-47
MS-1480	Seals - oil or grease - Molded Synthetic Rubber - Medium soft (Same requirements as MS-1626) (Spring suspension dust seals)	A C N P S	8 2 12-8-2-4-14 1 13-47
MS-1497	Gaskets for Refrigerating Freon Compressors (optional with MS-1834)	NA	8-30
MS-1525	Oil Hose - Synthetic Rubber (oil gauge hose)	Tube - S	7-9-11
MS-1585	Synthetic Rubber Coated Gaskets - Cnipboard Base	T	31-32-33

4123

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Number	Title	Composition	Supplier
MS-1586	Synthetic Rubber Coated Gaskets - Manila lined chipboard base	T	31-32-33
MS-1587	Synthetic Rubber Coated Gaskets - Fibre Board Base	T	31-32-33-44
MS-1616	Seals or Gaskets - Synthetic Rubber - Inside Cooling System - Medium Soft (Thermostat Gasket)	C H S	2-15 47 13-36-48
MS-1626	Seals - oil or grease - Extruded Synthetic Rubber - Medium Soft (same requirements as MS-1480) (Front end suspension dust seals)	A C N S T	8 2 8-2-4-14-19 13 47
MS-1641	Seals or Gaskets - Synthetic Rubber - Inside Cooling System - Stiff (Radiator cap gaskets)	C H N	2 47 30-48
MS-1642	Oil Seal Packings (Shock absorber seals)	S	18
MS-1666	Gasket - ligno-synthetic rubber - Medium Hard	NL	
MS-1675	Gasket - Synthetic Rubber - Soft (Rear main bearing cap gasket)	C N	2 2-4-8-13
MS-1683	Gasket - Synthetic Rubber Coated - Vulcanized Fibre Base	T	31-32-33
MS-1691	Seal - Synthetic Rubber and Fabric - Crankshaft Bearing - Type A	N	42
MS-1701	Gasket - ligno-Synthetic Rubber - Soft (Tappet cover - oil pan end and side gasket)	NL	
MS-1704	Gasket - Cork and Synthetic Rubber - Gasoline Sealing - Medium Hard (Fuel pump gasket)	S	43-44
MS-1765	Seals - oil - Molded Synthetic Rubber - Spline Shaft	H N	47 18
MS-1769	Boot or Diaphragm Material - Synthetic Rubber - Medium Cold Resistant (Propeller shaft boot)	N	2-18-36-49
MS-1773	Boot or Diaphragm Material - Synthetic Rubber - Extreme Cold Resistant (Fluid drive vacuum pump diaphragm) (To be superseded by MS-1888)	C	2
MS-1780	Seal - Synthetic Rubber - Chain case cover	N	18
MS-1830	Gasket or Washer Stock - Extruded Synthetic Rubber - Medium Hard (same requirements as MS-1425)	A C H N S	8 2 13 4 47

4124

6327

Number	Title	Composition	Supplier
MS-1834	Ligno-Neoprene Gaskets for Refrigerating Freon Compressors (same as MS-1666)	NL	
MS-1869	Gasket or Washer Stock - Extruded Synthetic Rubber - Medium Hard - Elevated Temperatures (Shock absorber gasket)	H	8-13
MS-1870	Gasket - Cork and Synthetic Rubber	HC NC	
MS-1883	Gasket - Ligno-Synthetic Rubber - Hard	HL	

Compositions

A	Ameripol	NC	Neoprene-Cork
C	Chemigum	NL	Neoprene-Lignin
H	Hycar	P	Perbunan
HC	Hycar-Cork	R	Rubber
HL	Hycar-Lignin	S	Synthetic (exact composition unknown)
N	Neoprene	T	Thiokol
NA	Neoprene-Asbestos		

In most cases where "S" appears as the composition the part is made of Hycar. Hycar is being used more and more on Chrysler cars due, I believe, to the enthusiasm of the individual rubber companies for Hycar. Ohio Rubber and General are the main Hycar suppliers. Hendrick told me that Ohio Rubber was using approximately 30,000 lbs. per month of Hycar.

Suppliers

1. Firestone
2. Goodyear
3. Thermoid
4. Manhattan
5. Miller
6. Inland
7. Flex-O-Tube
8. Goodrich
9. Weatherhead
10. Titeflex Hose
11. Columbia Products
12. Dryden
13. General
14. U. S. Rubber
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16. Dunlop (Canada)
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18. (Chicago Rawhide
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25. Boston Woven Hose
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27. Baldwin
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29. General Rubber (Canada)
30. Raybestos
31. Minnesota Mining & Mfg. Co.
32. St. Clair Rubber
33. O'Day Co.
34. Johnson Rubber
35. Continental Rubber Works
36. Standard Products
37. Spaulding Fibre
38. Continental Diamond Fibre
39. Felt Products Mfg.
40. Vellumoid
41. Michigan Devices
42. Victor Gasket

4125

6:328

43. Armstrong Cork
44. Detroit Gasket
45. National Machine Products
46. Acadia Synthetic Products
47. Ohio Rubber
48. Seiberling
49. Gates

McCortney expects to attend the Atlantic City meeting.

DFT:eb
6/27/41

CHS
ERB
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RHS
DISCUSS WITH
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Called with JHE.

JHE asked Hendrick to confirm a rumor going around Detroit that the price of Hycar was to be dropped to 50¢ a pound during the first part of September. Hendrick said that he had been informed that the price would be dropped about that time but did not know the contemplated new price.

The primary cause of the call was to discuss the flexing results on the fluid drive vacuum pump diaphragms which we had compounded and cured at Goodyear on August 8th. Since that time the molds were withdrawn from Goodyear and sent to Chicago Rawhide and the flexing machine has been busy testing the new production lots from Chicago Rawhide. The tests are not entirely complete but Hendrick will give me a report on them and at that time I will make a full report.

It seems doubtful if the present type of pump with the neoprene diaphragm will be continued. Chrysler got into so much grief through the use of Chemigum diaphragms (although the Chrysler Rubber Laboratory had advised against it) that the design engineers are very wary of using any device along these lines. They propose to go to a piston pump in which leather seals would be used. The Rubber Laboratory are fighting to retain the diaphragm because of the background and experience they have had with it so that probably a 50-50 chance of retaining this business exists.

Defendant's Exhibit (DP) No. 361 6329

DUPONT

SALESMAN'S TRADE REPORT

RUBBER CHEMICALS DIVISION

CANARY — RUBBER LABORATORY
BLUE — WILMINGTON SALES
GREEN — SALESMAN'S COPY
PINK — PROMOTION & ANALYSIS
GOLDENROD — TRADE RECORD
FIRST WHITE TISSUE — RUBBER LABORATORY

SALESMAN J. B. LEDDEN

CUSTOMER FISHER BODY ENGINEERING

ADDRESS

BRANCH OFFICE AKRON MILL CALL No. 6 REPORT No. [illegible]

CALL DATE 10-19-50 WRITTEN 10-20-50 TYPED 11-[illegible]

CLASS PC PER CENT CAPACITY [illegible]

CITY DETROIT STATE MICH.

INTERVIEWED	TITLE
H. BECKERLEG	CHIEF ENGINEER
G. [illegible]SON	ASSISTANT

SAMPLES OR LITERATURE

IMPORTANT PLEASE REPORT ON THE FOLLOWING SUBJECTS IN THE ORDER GIVEN: 1. ACCELERATORS; 2. ANTIOXIDANTS; 3. PEPTIZING AGENTS; 4. COLORS; 5. RETARDERS; 6. MISCELLANEOUS CHEMICALS; 7. NEOPRENE; 8. NEOPRENE LATEX; 9. GENERAL INFORMATION.

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☐ AHW	☐
☐ CEM	☐
☐ DBF	☐
☐ HHA	☐
☐ LSB	☐
☐ MFT	☐
☐ NLC	☐
☐ EXPORT	☐
☐ (2) C.I.L.	☐
☐	☐
☐	☐

RE NEOPRENE WEATHERSTRIP VENEER

This call was prompted from a note received from HWD, Boston, concerning the amount of neoprene required by Sponge Rubber Products for weatherstrip for Fisher Body. Beckerleg said that the only use of neoprene veneer authorized by Fisher at this time was being done at the Dryden Plant in Keokuk, Iowa. Beckerleg said he had been at Derby, Conn. a few days ago and had found out that Sponge Rubber was supplying the neoprene veneered section of weatherstrip to Fisher. They have been doing this for the past 3 or 4 months and Fisher was not aware of it. It has not been for any particular use or reason that Sponge has been doing this other than it fitted into their works causing less scrap in the plant than if they used GR-S which folded more and resulted in a higher percentage of waste. Beckerleg said that as far as he was concerned the item could have been made from GR-S natural or anything that Sponge desired and that under no conditions could it be assumed that Fisher wanted or required the neoprene veneer on this part. He did state further that it was to Fisher's advantage to have neoprene on the part but that certainly they were not going to pay an extra cent for the neoprene.

AMPLES OR LITERATURE

MPORTANT : PLEASE REPORT ON THE FOLLOWING SUBJECTS IN THE ORDER GIVEN: 1. ACCELERATORS; 2. ANTIOXIDANTS; 3. PEPTIZING AGENTS; 4. COLORS; 5. RETARDERS; 6. MISCELLANEOUS CHEMICALS; 7. NEOPRENE; 8. NEOPRENE LATEX; 9. GENERAL INFORMATION.

LOS ANGELES
NEW YORK
SAN FRANCISCO
RAK
CAB
~~OSG~~
WAK
VAC
AHW
CEM
DBF
HHA
LSB
MFT
NLC
EXPORT
(2) C.I.L.

EU RE[illegible] ATHERSTRIP VENEER

This call was prompted from a note received from HWD, Boston, concerning the amount of neoprene required by Sponge Rubber Products for weatherstrip for Fisher Body. Beckerleg said that the only use of neoprene veneer authorized by Fisher at this time was being done at the Dryden Plant in Lockak, Iowa. Beckerleg said he had been at Derby, Conn. a few days ago and had found out that Sponge Rubber was supplying the neoprene veneered section of weatherstrip to Fisher. They have been doing this for the past 3 or 4 months and Fisher was not aware of it. It has not been for any particular use or reason that Sponge has been doing this other than it fitted into their works causing less scrap in the plant than if they used GR-S which folded more and resulted in a higher percentage of waste. Beckerleg said that as far as he was concerned the item could have been made from GR-S natural or anything that Sponge desired and that under no conditions could it be assumed that Fisher wanted or required the neoprene veneer on this part. He did state further that it was to Fisher's advantage to have neoprene on the part but that certainly they were not going to pay an extra cent for the neoprene.

JPLedden/ecm

A COPY OF EVERY REPORT COVERING THE TIRE INDUSTRY SHOULD GO TO THE AKRON OFFICE

B

4127

Note:

Pages 6330 - 6331 are on card 132.

Defendant's Exhibit (DP) No. 364

6332

EXCERPTS FROM R&H CHEMICALS DEPARTMENT'S "SALES RESEARCH AND DEVELOPMENT MONTHLY SUMMARY REPORTS" CONCERNING CHEVROLET #30 SALT

"The composition of Chevrolet #30 salt has been revised to 30% NaCN, 15% $BaCl_2$, 30% NaCl, 25% Na_2CO_3 due to excessive scumming of the previous composition. The new salt is giving excellent results and Chevrolet estimates that at 10¢/lb. for Chevrolet #30 its cost per pound of steel treated is about 30% lower than that of two competitive salts now being used." (p. 7 of Report for December 1938)

"Operation of the experimental Chevrolet #30 bath at Detroit has been completed. Chevrolet's Metallurgical Department is preparing a formal report recommending this composition to replace Houghton's Perliton and Park Case. The bath, stabilized at 15% cyanide and 2 to 3% cyanate, is ideal for their work and shows a 30% saving in materials over competitive products. After formal approval, all suppliers will have an opportunity to bid on this composition under a G.M. specification. Since we believe we can make this salt at a lower price than competitors, we should be able to obtain all the business." (p. 6 of Report for January 1939)

"The Detroit Chevrolet plant is at present using up their stock of Perliton and Park Case. They plan to operate a minimum of 8 pots on Chevrolet #30 and a maximum of 4 on Holden 100 or 200. Since each pot requires about 40 lbs. of replenishment per 8 hour shift, their consumption will be approximately 300 lbs. per operating shift or 4500 lbs. per five day week on a 24 hour schedule. They insist on two sources of supply; consequently, we cannot expect all of their salt business." (p. 9 of Report for May 1939)

Defendant's Exhibit (DP) No. 365

EXCERPT FROM THE REPORT FOR FEBRUARY 1933 OF THE R. AND H. CHEMICALS DEPARTMENT TO THE EXECUTIVE COMMITTEE DATED MARCH 21, 1933:

> "Our chief cyanide competitor in the case hardening field has been very active in pushing Aero-case during February. We have developed in our laboratories a new case hardening bath to meet this competition and during March our new process will be demonstrated at the plant of one of our larger customers." (p. 6)

Defendant's Exhibit (DP) No. 366 6334

EXCERPT FROM THE REPORT OF THE R. AND H. CHEMICALS DEPARTMENT FOR APRIL 1933 TO THE EXECUTIVE COMMITTEE, DATED MAY 25, 1933:

"In recent years a demand has appeared for a method of case hardening which will penetrate the steel to a greater depth than can be obtained with cyanide or other baths previously in use. Our laboratories have successfully developed a new fused bath which accomplishes this result using a cyanide derivative as the activating ingredient. 'Ducase' is the name being considered for this activating agent. A three-months' trial of this process is under way at the plant of Warner Gear Company at Muncie, Indiana." (p. 9)

4132

Defendant's Exhibit (DP) No. 367

EXCERPT FROM REPORT OF D. A. HOLT ENTITLED "METAL CYANIDE RESEARCH," DATED SEPTEMBER 7, 1933:

"The Ducase process was developed to strengthen our position in the case hardening field. The cyanide bath is satisfactory for case depths of but 0.010" or less. The Aero Case process can be used for case depths of at least twice this value and consequently has encroached on cyanide to some extent. With Ducase we have a process which may be used for all case hardening work which can be accomplished by a bath process. Ducase can be operated to give better results than any known bath hardening process as measured in terms of case depth per unit of time, hardness of case and simplicity of operation. We believe Ducase at the right prices (50¢ activator and 8¢ melt) will effectively handle the Aero Case competition." (p. 1)

Defendant's Exhibit (DP) No. 368 6336

EXCERPT FROM REPORT OF W. M. GAGER OF THE TECHNICAL SERVICE DEPARTMENT OF THE ROESSELER & HASSLACHER CHEMICAL COMPANY, INC. ENTITLED "SODIUM CYANIDE-ITS PRESENT STATUS IN THE STEEL TREATING INDUSTRY," DATED DECEMBER 19, 1932:

"The Aero-Case process of the American Cyanamid Company is being actively pushed as a reheating medium to replace cyanide. Nearly all of the automobile makers have one or two pots on Aero for case hardening but by far the largest unit for reheating is at the Buick Motor Car Company, Flint, Michigan. They have a pot eight feet in diameter, holding about 3000 lbs. of salt. All transmission gears (5150 S.A.E. steel) made at this plant (for Buick, Pontiac and Oldsmobile) are now heated in this bath instead of cyanide. This installation was originally at Muncie Products Company but was transferred when that plant was closed. Buick claims this to be superior to cyanide and more economical." (p. 4)

4134

Defendant's Exhibit (DP) No. 369. 6337

EXCERPT FROM REPORT OF R. B. K'BURG ENTITLED "DIVISION /R&H METALLURGICAL DIVISION/ PROGRESS REPORT FOR JANUARY 1-JULY 1, 1931," DATED AUGUST 18, 1931

"The analysis of one of Houghton's many case hardening mixtures, which showed it to be practically equivalent in composition to several of their other salts and to the R. & H. 45% cyanide-chloride mixture, will probably give us the cyanide trade of Fuller & Sons Mfg. Co., Milwaukee, Wis. Their engineer had stated to our salesman in the presence of their purchasing agent that he would not approve work done in R. & H. 45% cyanide-chloride mixture because the cyanide content was too low but must have the equivalent Houghton's Surface Hardening Cubes, for which they were paying considerably more than our quoted price. Their purchasing agent requested us to make an analysis of this Houghton salt, the result of which will probably be sufficient to overcome the prejudice of the engineer.

"Attempts to introduce our cyanide into the Oakland Motor Co., Pontiac, Mich., in place of that supplied by the Park Chemical Co. have been consistently unsuccessful. A trial run was made at their plant and photomicrographs of resulting cases prepared here illustrating a case of 0.002" depth on S.A.E. 1020 and 1010 steels after 20 minutes treatment in a bath which analyzed 32% NaCN. There is only a slight difference in price, that favoring us, and practically no difference in composition between ours and the competitive salt, but here again prejudice is against us.

"These instances are typical of the bias which exists in favor of some of our competitors and their materials irrespective of price." (p. 4)

Defendant's Exhibit (DP) No. 370

REPORT

63338

Name of Co. : THE ROESSLER & HASSLACHER CHEMICAL CO.

Department : CYANIDE SERVICE

Subject : VISIT TO THE DELCO REMY CO. ANDERSON IND. THURSDAY NOVEMBER 15th.

Date Nov. 15, 1928.

Author : W. M. GAGER.

OBJECT:

This visit was made at the request of Cleveland Office in order to compare our 75% cyanide mixture with a similar mixture formerly furnished them by J. T. Kelley Co. of Cleveland, Ohio.

CONCLUSIONS:

They are at present using our 75% mixture with very satisfactory results, and as long as our price is under that of our competitor and probably the same, we will continue to get the business.

The writer spent the entire day of November 15th at the Delco Remy plants and met:

Mr. Jerram, Purchasing Agent.
Mr. Gormley, Supt.
Dr. D. A. Cotton

Mr. Jerram turned the writer over to Dr. Cotton . We discussed their problems and visited their three plants where hardening operations are conducted. These three plants are so laid out that the hardening operations can not be centralized but each plant does their own hardening.

Plant No. 1 manufactures generators
Plant No. 2 " distributors
Plant No. 3 " starters.

They are also building a new plant here at Anderson for casting operations having the latest approved type of permanent moulds so that no sand moulding is required. They have also nearly completed a plant at Muncie for the manufacture of storage batteries.

Hardening Installation: This installation consists of 6 pots gas fired each 18" dia. x 24" deep. - Plant No. 1.

Plant No. 2: 6 pots gas fired 12" x 15" deep.
Plant No. 3: 6 pots gas fired 18" x 24" deep.

All of these pots are of "Nichrome" and each 6 is in one battery, one large hood covering the entire installation. The work treated in these furnaces is chiefly generator, distributor, and starter shafts and also other small parts which have to resist wear. The steel is 30 to 35 carbon for their hardening process is not strictly to obtain a case, but rather a surface hardness and a reheating combined. The parts are heated for 15 minutes in the molten bath temperature ranging from 1500 to 1525°F and are then quenched in oil. This oil quench reduces warpage to a minimum and only about one shaft in ten requires straightening after quenching.

4136

English Cyanide: The cyanide which they formerly used for this purpose was supplied by J. T. Kelley Co. of Cleveland and was of English manufacture, contrary to Mr. Dittmar's impression it was not a physical mixture but a fused product and supplied to them in the form of truncated pyramids very similar to the "Ocean Cyanide" samples which we have formerly examined. None of this material was available as their entire supply had been used before starting on our material but Dr. Cotton stated that he had analyzed this material and while he found it homogeneous and to contain 75% NaCN, he did find that it only contained 11% of salt and the remainder about 14% sodium carbonate. He does not believe that the 75% material should contain sodium carbonate in this amount as it is formed in the regular cyanide bath through its decomposition and for this reason alone he is more inclined to favor our material. Dr. Cotton has analyzed these materials quite frequently and he tests the bath daily and keeps the concentration around 30% NaCN, replenishing with the 75%.

The present consumption of cyanide is about 10 pounds per pot per day for the smaller sizes and from 20 to 25 lbs. per day for the larger pots. This would give him a maximum daily consumption of 360 pounds or about 9000 pounds per month.

Plating Operations: Considerable plating is done at the plants here and Mr. Cotton is very well acquainted with Mr. Proctor who frequently calls upon him. They are using entirely the French cyanide for their plating operations and a sample of this cyanide was obtained by the writer which will be analyzed both for our own information and also for Mr. Cotton. He states that he has analyzed the cyanide a number of times and has never found it to contain more than 95% NaCN. This cyanide is in the form of "eggs" somewhat flatter than our own and the weight is not uniform, varying from 30 to 40 grams, each. The analysis of this sample will be reported as soon as it is completed. A copy of our "Analytical Methods" was left with Dr. Cotton and he called to the writer's attention that these instructions called for the use of Barium Nitrate for the determination of carbonate whereas our book on "Cad-A-Loy" calls for the use of Barium Chloride for this determination. There is, of course, a different object to be obtained in these analyses. In the cyanide analysis it is desired also to obtain the chloride content and therefore, a chloride as a precipitant for carbonate can not be used.

The proposition of developing a quick convenient shop method for the approximate determination of the cyanide content of case hardening baths was discussed and Dr. Cotton believes that such a thing would be very valuable. He has thought of this before and states that a method was given to him from the description of which we presume it was the J. T. Kelley Co.'s method. The objection as he states is a balance of some sort is required in the shop.

As regards the future business here, we can be assured of this if our price is not higher than that of our competitors, and furthermore we have the backing of Dr. Cotton who believes that our mixture is superior to our competitors on account of having very little carbonate in it.

WHG:EK

EXCERPTS FROM REPORT TO EXECUTIVE COMMITTEE ENTITLED "TECHNICAL ACCOMPLISHMENTS FOR 1938," DATED FEBRUARY 2, 1939 (PP.1-2)

"Our foremost technical contribution to the electroplating industry was the perfection of the 'Du Pont High Speed Copper' Process. The process was announced in October and has found ready acceptance by the trade as it filled a long-felt need. Sixty-three companies have purchased materials for 'High Speed Copper' plating installations, 14 of these being commercial production units. Gross sales during 1938 were $15,235, with 1939 sales of salts, brightener, and anodes estimated at $150,000.

"Through the cooperation of the two laboratories a process was developed that makes possible the speedy deposition in appreciable thicknesses of smooth, bright copper plating which can be readily buffed. The ultimate cost of copper applied by the process should be considerably less than old-type copper plating baths. The increase in production, reduction in power requirements, and ease of buffing far offset the higher initial costs. The properties of 'Du Pont High Speed Copper' indicate that it may find extensive use in new applications where copper cyanide baths have not previously been used; e.g., heavy deposits on steel wire and printing rolls, and for electroforming. Pending outcome of exposure tests and modifications of specifications, there is a possibility of this copper displacing a portion of the nickel now used as an undercoat for chromium. This should extend the use of copper plating, particularly in the automotive industry, since the lower cost of the 'Du Pont High Speed Copper' Process will enable the plater to increase depth of the copper plated layer, and decrease thickness of the more expensive nickel overcoat, at the same time eliminating a buffing operation."

Note:

Page 6341 is on card 138.

Defendant's Exhibit (DP) No. 373 6312

ELECTROCHEMICALS DEPARTMENT
TECHNICAL SERVICE REPORT

MAY 4 1939

COPIES: FFOplinger-N.F.Gen.File REC'D BY TRADE ANALYSIS

CUSTOMER: Cadillac Motor Co. - Div. of GMC DATE Apr. 25,1939 No. 51

STREET NO.

CITY AND STATE: Detroit, Mich. AUTHOR F.F.Oplinger

INTERVIEWED (GIVE TITLES): Mr. J. Bunch, Supt. of Plating

INTERVIEWED (GIVE TITLES)

PRODUCT INVOLVED: H.S. COPPER PLATING

INDUSTRY:

PURPOSE OF CALL:
☐ ROUTINE ☐ TROUBLE AND/OR SERVICE
☐ PROSPECT ☐ DEMONSTRATION

The writer found Mr. Bunch and Mr. Kushner (Plater) in a very amiable frame of mind to-day as a result of which I was able to obtain some very valuable information. About a week ago the 2000 gal. High Speed Copper solution was filtered thru a filter having lead plates. As a result considerable lead got into the solution and the result was that it did not function satisfactorily for a short period of time and the anodes had to be cleaned in order to remove lead. Fortunately, not enough lead got into it to cause any serious trouble and the plater was able to proceed without a great deal of difficulty. At the time I called the solution appeared to be functioning entirely satisfactorily.

In going over their replenishing data, I find that they have added almost no sodium cyanide to the solution, having been able to control the cyanide content very nicely thru the use of High Speed Salts. As nearly as could be determined, they do not use in excess of about 15 lbs. of High Speed Salts per day. This is not excessive considering a fairly heavy drag-out.

Mr. Bunch told me confidentially that he was fairly certain that in the near future, they would come to a definite decision to buy a new full automatic unit for copper plating and that about a 6000 gal. solution would be installed.

During the past month they have spent considerable time and money obtaining cost data on the various bright nickel plating processes as well as on High Speed Copper. Mr. Bunch claims that the data is as accurate as it was humanly possible for them to get it. According to the final results the cost of plating 0.001" of copper with the High Speed process including anodes, current, chemicals for replenishing and for cleaning and pickling was found to be 1.1 ct. The cost of bright nickel plating was found to be 2 cts./0.001"/FF. As a result of their cost studies, it is entirely possible that they may discontinue the present method of bright nickel plating and substitute another.

(OVER)

REMARKS BY DISTRICT OFFICER OR WILMINGTON

4140

The important fact is that they have found High Speed Copper plating to cost only one-half as much as bright nickel plating. This most certainly indicates that there will be a definite increase in the amount of copper used and a decrease in the amount of nickel.

Copper

The costs of High Speed/plating are also being compared with the cost of Rochelle Copper plating. These figures are not yet available.

Solvent Degreasing

This subject was also discussed with Mr. Bunch and the writer learned that our Mr. McKinley had been here several days previous and was returning on Thursday. No doubt Mr. McKinley will report full details concerning their operations.

I gather that Mr. Bunch is well pleased with the interest that the Du Pont Co. is taking in this matter. The only comment I have to make at this time is that while their results are very poor, the problem with which they are faced is about as bad as can be expected to be found anywhere due to the size and shape of the articles and to the fact that automatic buffing is used to a considerable extent. There appears to be no question but what material which is buffed automatically is much harder to clean due to increased heat and pressure whereby the buffing compound becomes encaked in the recesses to a greater extent than if hand buffing were used.

FFO:MS

Defendant's Exhibit (DP) No. 374.

TECHNICAL SERVICE REPORT

Terminal Mfg Div., G.M.C.
No 6300 W. Fort St
Detroit, Mich.

Defendant's Exhibit (DP) No. 375

6345

ELECTROCHEMICALS DEPARTMENT

TECHNICAL SERVICE REPORT

COPIES:

REC'D BY TRADE ANALYSIS:

CUSTOMER: Cadillac Motor Car Div., G.M.C. DATE 10-1-40 NO. 434

STREET NO: 2860 Clark Avenue

CITY AND STATE: Detroit, Michigan AUTHOR H.W.Kennedy

INTERVIEWED (GIVE TITLES) J. Bunch, Plating Supervisor

PRODUCT INVOLVED: High Speed Copper

INDUSTRY:

PURPOSE OF CALL:

☐ ROUTINE XXXXXXXXXX

☐ PROSPECT ☐ DEMONSTRATION

The operation of the High Speed Copper solution has improved considerably since last week and as a result their rejections are going down daily. They have installed a pipe to introduce boiler condensate to make up for evaporation losses in the High Speed Copper tank, and this will eliminate the addition of cold water which not only reduces the solution temperature but also reduces hardness which apparently has been a source of roughness in this tank.

They are using sprays on both sides of the tank to cut down on drag out losses as well as to keep the parts wet while being transferred from the High Speed Copper tank to the first hot water rinse tank. At the present time these sprays are city water, but Mr. Bunch intends to use boiler condensate for this purpose to eliminate another source of roughness.

Mr. Bunch said that he has placed a requisition with the purchasing department for the purchase of 4,000 pounds of High Speed Copper Anodes in an attempt to settle once and for all whether there is any difference between our anodes and the Revere anodes which they have been using. If there is no difference he will continue to purchase Revere anodes.

I brought up once again the subject of High Speed Copper anode hangers. Mr. Bunch said that he had discussed this matter with Mr. Oplinger in the past, and it was the consensus of opinion that their present method of handing anodes would be just as satisfactory as using the anode hangers and is of course considerably less expensive, from an installation point of view. He also felt that the use of anode hangers would increase the cost of replacing anodes as they used up. I pointed out that this might easily be offset by the elimination of the tendency for anodes to drop to the bottom of the tank if they are hung up on the hooks. However, Mr. Bunch said that he was not interested in making a trial of our anodes. I showed him a blue print of our anode hangers and he said that it was essentially the same as has been previously sketched by Mr. Oplinger for him.

I pointed out that there seemed to be a tendency for a white precipitate to form on anodes at points of low current density and that through the use of anode hangers this might be eliminated. Also that as long as he did not wish to use the anode hangers he should at least reduce the number of anodes on any one hook to at least two and preferably one to eliminate the tendency for precipitate to form in between the anodes.

(4143)

Defendant's Exhibit (DP) No. 376 6.3.16

ELECTROPLATING DIVISION

MASTER REPORT

COUPLED

COPIES:

REC'D BY TRADE ANALYSIS: JAN 23 '941

FIRM NAME: Cadillac Motor Car Co.

DATE: 1-2-41 NO. 1

STREET & NO.: 2860 Clark Ave.

AUTHOR d W Kennedy
R.R.Bair

CITY & STATE: Detroit, Mich.

CALLS PER YEAR: 12

AFFILIATIONS: Div. G.M.C.

INDUSTRY: Mfgrs of automobiles

MEN TO SEE: (WITH TITLES) W.E.Beckett, P.A. - (See below)

ELECTROPLATING INFORMATION

TYPE OF SOLUTION	GALLONS	PROCESS	TYPE & MAKE OF EQUIPMENT	REMARKS
H.S.Copper	3800	Du Pont	Stevens Full Automatic	machine
"	2000	"	Still Tank	Grille Plati
"	2000	"	"	Misc.Steel "
Bright Nickel	5900	McGean	Stevens Full Automatic	machine
"	1850	Udylite	Still Tank	Grille Plating
"	1850	"	"	"
"	1780	"	"	Misc.Steel "
Chromium	1770		Stevens Full Automatic	machine
"	545		Still Tank	Grille Plating
Rochelle Copper	345		Stevens Full Automatic	Strik
"	523		Still Tank	Strike
"	1000		Still Tank	Strike

Men to see continued.

Mr. Kupetz, Supt. Motor Div. (Including Plating Department)
Mr. Jesse Bunch, Plating Supervisor
Mr. John Kushner, Plating Foreman
Mr. Harry Blum, Asst. Plat Foreman
Mr. Harold Miller, Plating Clerk

Defendant's Exhibit (DP) No. 377 6347

THE R. & H. CHEMICALS DEPARTMENT

TECHNICAL SERVICE REPORT

COPIES F. F. Oplinger - H.F.File

REC'D BY TRADE ANALYSIS

CUSTOMER Chevrolet-Flint

DATE 8/8/39 NO. 130

STREET NO.

CITY Flint, Michigan

AUTHOR F. F. Oplinger

INTERVIEWED (GIVE TITLES) Mr. O. A. Spencer, Metallurgist

PRODUCT INVOLVED

INDUSTRY

PURPOSE OF CALL

☐ ROUTINE ☐ TROUBLE AND/OR SERVICE

☐ PROSPECT ☐ DEMONSTRATION

The 15,000 gallon High Speed Copper solution installed by the above sometime ago is not now being used. They are producing about 150 grills per hour using the same method as for 1939 production which consists of a copper strike on a polished grill prior to Bright Nickel plating. The nickel is also buffed after plating. This matter was discussed with Mr. Spencer and with Mr. Roether, the plater. Their reasons for sudden change in plans are rather vague. We are inclined to believe that we did not get the full and true story.

As the plater told us when they started operations, they had some trouble with the machine which had been installed for automatic buffing of the copper because of this, they tried the method previously used and much to their amazement found that they could polish the steel prior to plating. Because of this, the story now is that it will probably be cheaper for them to use former practice than to resort to High Speed Copper plating prior to the nickel.

The polishing operation which they are now doing in our opinion at least comes a long way from representing a good polishing job. The result is that at least in our opinion the final finish on the grill is not very good. Certainly it is not as good as if the copper was buffed and then Bright Nickel plated over the buffed copper.

No absolutely definite decision has been made not to use the High Speed Copper but Mr. Spencer and the plater seem to be of the opinion that they will not use it at least on 1940 production.

This whole situation was discussed with Mr. William Phillips of the General Motors Research Corp. and he will look into the matter. We plan to do nothing for the present or at least not until we have again had an opportunity to see Mr. Phillips and discuss with him what he may have found out.

FORM * BY DISTRICT OFFICER OR WILMINGTON

DO NOT WRITE BELOW THIS LINE

6348

Chevrolet-Flint Report No. 120

As previously reported, Mr. Spencer and his assistant have been making some experiments on the toxicity of sulfocyanide to goldfish. This matter was discussed with Mr. Spencer briefly today and as nearly as we could determine, their results indicate that dilute solutions of sodium sulfocyanide are more toxic to goldfish than are dilute solutions of sodium cyanide. The statement was made that fish live for as much as one hour and a half in a sodium cyanide solution containing one thousand parts per million. Such a solution has approximately the same effect on the fish as a solution of sodium sulfocyanide containing only five hundred parts per million. These results, of course, do not agree with those published by the Michigan Experimental Station who claims that one part per million or less of sodium cyanide was toxic to fish. Apparently also they have made some experiments with trout as well as with goldfish and the two do not check.

As soon as time permits, the writer will again discuss the matter of conversion of cyanide to sulfocyanide as a means of disposal with the Mechanical Department at Niagara Falls in order to arrive at a decision as to our future policy concerning this matter.

FFO-HW

Copper operations. He said he did not know anything else

I mentioned this to Mr Cole and he said that
automatic machine of General Motors ... copper ...
consequently cut down on their High Speed Copper ...
know that the High Speed Copper Salts and ...
we would glad to accept them for credit. However, ...
Chicago to find out just what they wished to do with the ...
that they do not know yet just what they will do in this ...
possibility that they will move the High Speed Copper ...
Evidently, the acid copper has not proved out very well on ...

stated out that if their shutting down of the High Speed Copper ...
about principally by the Production Department who found the acid ...
to be so much easier to buff. They could not afford to continue to op...
High Speed Copper

We inspected the Zin-O-Lyte barrel installation and Mr Cole said that he ...
was well satisfied with the brightness of deposit, which compared quite favorably ...
with the nickel and chrome deposit previously used. They have had some trouble ...
with brown staining which he feels is due entirely to their plating. He has ...
tried bright dipping the parts and has been able to remove some of this stain ...
on parts which were plated last week. These same parts last week however, ...
immediately after plating would not bright dip. I told him that this was some ...
rather new to me in that my feeling has always been that in order for a Bright Dip ...
to work satisfactory on a part, it should be used immediately after plating ...
rather than waiting for a number of days. They will investigate their finishing ...
procedure further in an attempt to improve the results obtained.

We also inspected the 1,000 gallon still tank which was just installed. The ...
Brightener has not yet been added to this tank, nor do they have sufficient AAo ...
They placed an order for AA7 and were told that we could not supply it. However, ...
no substitute was sent. Consequently in order to expedite matters, Mr Hidley ...
gave me an order for 100 lbs. of AA8 and a wire was sent to Cleveland asking that ...
the material be shipped tomorrow morning.

[4] 42

DEFENDA Defendant's Exhibit (DP) No. 378

6349

TECHNICAL SERVICE REPORT

CHEVROLET GEAR & AXLE DIVISION - GMC
1640 HOLBROOK STREET
DETROIT 12, MICH.

DATE 5/29/45 NO 306

AUTHOR H. L. BEHNER

W D HUFFMAN, MET.

PURPOSE OF CALL

TROUBLE AND/OR SERVICE DEMONSTRATION ROUTINE X PROSPECT

POTASSIUM HIGH SPEED COPPER
UNICHROME COPPER

HAS CUSTOMER ANY TECHNICAL PROBLEMS ON WHICH WE COULD OFFER RESEARCH ASSISTANCE?
YES EXPLAIN BELOW NO

PLEASE GIVE VIEWS AS DATE FOR TECHNICAL REQUIREMENTS FOR EACH PRODUCT DISCUSSED

CHEVROLET BAY CITY - COPPER PLATING

AS YOU KNOW FOR A WHILE HUFFMAN WAS SUPERVISING PLANS TO PLATE DIE CASTINGS AT CHEVROLET BAY CITY HE RECOMMENDED THAT HIGH SPEED COPPER BE USED. IT NOW APPEARS THAT BAY CITY HAS DEFINITELY DECIDED ON THE UNICHROME PROCESS AND REASONS FOR THIS PREFERENCE ARE COVERED IN MY REPORT #283 OF 5/17/45. THE ACTUAL CHOICE OF THE PROCESS WAS LEFT TO BAY CITY. HUFFMAN GOT THE ABOVE INFORMATION FROM "RED" WILSON WHO VISITED BAY CITY A FEW DAYS AGO. HUFFMAN SAYS THAT HE BELIEVES HIGH SPEED COPPER

"	1850	"	"
"	1780	"	" Misc.Steel "
Chromium	1770		Stevens Full Automatic machine
"	545		Still Tank Grille Plating
Rochelle Copper	345		Stevens Full Automatic Strike
"	523		Still Tank Strike
"	1000		Still Tank Strike

Men to see continued.
Mr. Kupetz, Supt. Motor Div. (Including Plating Department)
Mr. Jesse Bunch, Plating Supervisor
Mr. John Kushner, Plating Foreman
Mr. Harry Blum, Asst. Plat Foreman
Mr. Harold Miller, Plating Clerk
Mr. Wm. O'Neil, Plating Chemist
Mr. Wesley Edwards, Plating Chemist
Mr. Ray Cordes, Metallurgist

Cyanide Zinc	385	2 Barrel LaSalco Units
Cyanide Zinc	220	Still Tank

---

1. Between 90 and 95 percent die castings - balance steel.

2. Indications are that for the 1942 model season from 90 to 95 percent of the work will be steel - the balance die castings. This will no doubt entail some change in plating equipment.

3. Since Udylite brought out their new Bright Nickel these people are inclined to favor this process. Consequently there is some possibility that Udylite Bright Nickel will be installed in the full automatic machine.

Up until the latter part of last year they purchased all of their copper anode on General Motors contract. However, they have been favoring us with their busine since this time. They will continue to do this, however, only as long as they are satisfied our anodes are superior to the competition as they claim that they have to pay more for the Du Pont Anodes than they did in the past.

4. Mr. Bair will report details of work done at this plant today.

Defendant's Exhibit (DP) No. 379

(5.3.51)

THE R. & H. CHEMICALS DEPARTMENT
ROUTINE TRADE REPORT

MAY 15 1941

COPIES:
REC'D TRADE ANAL:

CUSTOMER Olds Motor Works Divn. GMC DATE 5/8/41 REP. NO. 283
STREET NO. Townsend St. CUST. CL. 1-4
CITY Lansing STATE Mich.
TYPE OF INDUSTRY (BE SPECIFIC) Mfr. Motor Cars & Army Ordnance
INTERVIEWED (TITLE) C. J. McManus, P. A., and R. W. Redmond, Eng.
INFORMATION DEVELOPED BY:— VISIT ☑ PHONE ☐ RECORD ☐
DISTRICT OFFICE Chicago SALESMAN K'Burg

ADDITIONS TO OR CHANGES IN ESTIMATED ANNUAL REQUIREMENTS REPORTED ON MASTER TRADE REPORT

PRODUCT	USE	ESTIMATED ANNUAL REQUIREMENTS	MANUFACTURER	BUYS THRU	PRICE AND TERMS	CONTRACT EXPIRES

THE MANAGEMENT IS PARTICULARLY INTERESTED IN SECURING INFORMATION ON THE FOLLOWING POINTS. REPORT FULLY OTHER IMPORTA T DATA DEVELOPED THRU THE CALL. COVER ONLY ONE SUBJECT IN EACH PARAGRAPH AND CAPITALIZE OR UNDERSCORE HEADINGS.

1. INFORMATION RELATIVE TO CUSTOMER'S CREDIT STATUS.
2. INFORMATION CONCERNING COMPETITIVE PRODUCTS AND COMPETITIVE ACTIVITIES.
3. NEW PRODUCTS AFFECTING OUR MARKETS.
4. CONDITION OF CUSTOMER'S BUSINESS: % OF CAPACITY OPERATING; OUTLOOK.
5. WHAT CHANGES, OTHER THAN IN REQUIREMENTS, SHOULD BE MADE ON MASTER TRADE REPORT?
6. HAS THIS COMPANY ANY TECHNICAL PROBLEMS ON WHICH WE MIGHT RENDER ASSISTANCE?
7. CAN THE MAIN OFFICE BE OF ASSISTANCE?
8. OTHER REMARKS.

3. HIGH SPEED COPPER - They are definitely planning upon the installation of 26,000 gallons of High Speed Copper in a new $125,000 plating unit for their bumpers. Although they have asked us to deliver approximately 75,000 lbs. of "RH-553" on August 15th, it is doubtful if they can get the solution and equipment operating earlier than Sept. 15th, and possibly October 1st at the latest. This is entirely unofficial as they still intend to make every effort to start by August 15th.

Despite assertions by company representatives that we are quoting on the above

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Despite assertions by company representatives that we are quoting on the above quantity of High Speed Copper Salts subject to our ability to supply it in August, Redmond seems to have taken it for granted that they will get the material when they want it. In fact he said that he does not intend to worry about securing the copper or the nickel since both Harshaw and H-VW-M appear to have fairly well committed themselves on Nickel Anodes and Nickel Salts. Which solution will be used has not yet been decided.

I tried to impress upon Redmond the fact that a definite promise could not be made to deliver as much material as he wants on August 15th, although we would certainly do everything within our power to supply them when the material is needed. He expects to be East some time soon, and if he has a chance will stop in at Wilmington to see Mr. Oplinger. They expect to have equipment released from other work in order to install the trial solution some time during the next six weeks.

SHELL PLANT - NOTE TO DR. GILBERT - I tried to get in touch with Mr. Hartman, asst. supt. in this plant, and Mr. Harry Howell, supt., but neither party was available. Consequently, there is nothing more to add to previous information about their idea to fill forging punches with metallic sodium.

(over)

CHEVROLET GEAR & AXLE DIVISION - GMC
1640 HOLBROOK STREET
DETROIT 12, MICH.

W. D. HUFFMAN, MET.

DATE 5/29/45

AUTHOR H. L. REITER

PURPOSE OF CALL

TROUBLE AND/OR SERVICE
DEMONSTRATION
ROUTINE X
PROSPECT

POTASSIUM HIGH SPEED COPPER
UNICHROME COPPER

HAS CUSTOMER ANY TECHNICAL PROBLEMS ON WHICH WE COULD RESEARCH ASSISTANCE?

YES EXPLAIN BELOW
NO

PLEASE GIVE YOUR ESTIMATE OF GMC'S ANNUAL REQUIREMENTS FOR EACH PRODUCT DISCUSSED

CHEVROLET BAY CITY - COPPER PLATING

AS YOU KNOW FOR A WHILE HUFFMAN WAS SUPERVISING PLANS TO PLATE DIE CASTINGS AT CHEVROLET BAY CITY HE RECOMMENDED THAT HIGH SPEED COPPER BE USED. IT NOW APPEARS THAT BAY CITY HAS DEFINITELY DECIDED ON THE UNICHROME PROCESS AND REASONS FOR THIS PREFERENCE ARE COVERED IN MY REPORT #263 OF 5/17/45. THE ACTUAL CHOICE OF THE PROCESS WAS LEFT TO BAY CITY HUFFMAN GOT THE ABOVE INFORMATION FROM "RED" WILSON WHO VISITED BAY CITY A FEW DAYS AGO. HUFFMAN SAYS THAT HE BELIEVES HIGH SPEED COPPER WOULD HAVE BEEN THE BETTER BET, BUT THAT THE EQUIPMENT ACCORDING TO WILSON WILL BE SUITABLE FOR HIGH SPEED COPPER IN CASE THE UNICHROME PROCESS DOES NOT MEET THEIR EXPECTATIONS. IT IS VERY EVIDENT THAT THERE IS CONSIDERABLE CONFLICT OF OPINION IN THE CHEVROLET GROUP, SINCE HUFFMAN WAS NOT IN FAVOR OF CHEVROLET'S DECISION TO USE FLASH COPPER DEPOSITS FOLLOWED BY HEAVY NICKEL ON BUMPER BARS. HE WOULD HAVE PREFERRED TO BUFF THE COPPER AND THEN FOLLOW WITH BRIGHT NICKEL.

(4147)

6351

NOTE TO DR. SIMINGTON - I unders and that [redacted] shells produced by this plant will not be of the armor piercing type and, therefore, there will be no case hardening involved.

4. They are still producing cars at capacity.

5. "CYANEGG" & COPPER CYANIDE - Not long ago McManus cancelled 25,000 lbs. of "Cyanegg" and 6,500 lbs. of Copper Cyan. Material originally was scheduled to be used in a cyanide copper installation to be installed at a later date. Since they have now decided to use High Speed Copper, they will want "RH-553" instead.

ZINC PLATING - They are still zinc plating and getting sufficient zinc anodes for continuous operation. McManus does not say who is supplying them with zinc metal but according to Redmond they are getting it regularly.

[E 4149]

Defendant's Exhibit (DP) No. 372

COPPER PLATING PROCESSES

Du Pont's Participation in Supplying Requirements of General Motors Division

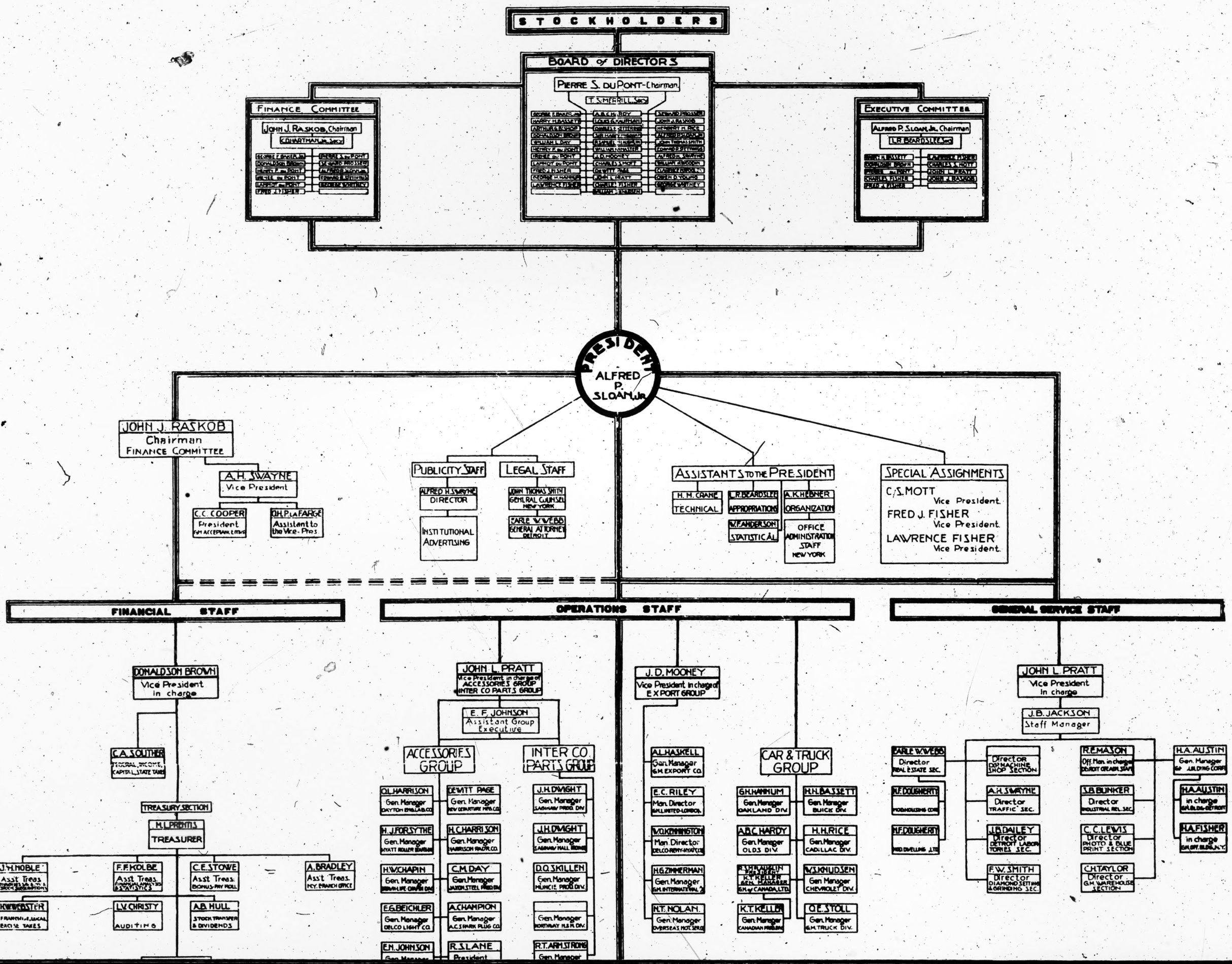
	1938	1939	1940	1941	1946	1947	1948	1949	1950
CADILLAC	Installed duP process in May (1st GM installation).	Expanded usage of duP process.	Using duP process extensively.	Further expanded use of duP process. Installed H-VW-M process for part of production.	Using duP & H-VW-M processes for initial post-war production.	Converted large duP solution to MacDermid process.	Installed duP process in 2 new units -- modified duP solution by adding MacDermid materials. Rejected WICO process.	Using duP process &, to lesser extent, MacDermid process.	Using duP process for major part of plating.
BUICK	Does no decorative plating. Copper plates cam shafts, using standard cyanide process. Has never used du Pont process.								
CHEVROLET	Interested in duP process but did not install solution. Using copper strike only followed by heavy nickel.	Installed duP process at Flint, discontinued after two months.	Again using copper strike followed by heavy nickel.	Replaced some nickel with copper due to shortage -- acid copper process adopted.	Reverted to pre-war heavy nickel for decorative plating -- Bay City adopted Unichrome process for copper plating diecastings.	Continuing with heavy nickel -- no duP copper except at Buffalo.		Copper plating units installed at Cleveland & Saginaw -- MacDermid process used in both installations.	Day-Brite acid process adopted at Flint and Forge due to nickel shortage.
OLDSMOBILE	Doing very little decorative plating -- indicated interest in du Pont process but declined to install trial solution.			Installed duP process on small scale in August, large unit in December, rejecting GM acid copper.	Using duP process extensively.	Using reduced copper plate with heavy semi-bright nickel due to cracking of Bright Nickel.	Resumed use of heavy copper plate, using duP process extensively.	Replaced duP process with WICO process, later switched to Wessex process.	Using Wessex process extensively -- duP process entirely eliminated.
PONTIAC	Using standard cyanide process for relatively thin copper plate.	Samples plated satisfactorily with duP process, but no installation made.	DuP process installed for part of production, using solution discontinued at Chevrolet-Flint.	Increased use of duP process with installation of new plating machine & enlarging of existing tanks.	Installed very large new plating equipment, using duP process in two 25,000 gallon tanks, Unichrome copper in a 3rd.	Using duP process on a large scale, encountering some roughness due to increased thickness of plate.	Using duP process -- experimenting with acid copper in attempt to eliminate buffing.	Continuing with duP process but unable to eliminate buffing.	Costly modifications made in plating equipment in order to replace du Pont process with Day-Brite acid copper.
TRUCK & COACH	Copper plating operations very limited, using standard cyanide process.				Installed decorative plating equipment -- adopted GM acid copper, rejecting duP and Day-Brite processes.	Considered replacing GM process with duP or Day-Brite but decided against this action.	Using GM acid copper for all production except a few miscellaneous parts, which are plated in small Rochelle bath.		
TERNSTEDT	Doing extensive plating with standard cyanide process -- installed experimental unit of duP process in July (2nd GM installation), production unit in December.	Increased use of duP process in January -- discontinued it entirely in July.	Resumed experiments with duP process, later installed large production solution.	Discontinued use of duP process - converted to GM acid copper.	Using GM acid copper and H-VW-M process very extensively -- no duPont copper used.				
A.C. SPARK PLUG	Using standard cyanide solution for production -- duP process installed in experimental unit late in year.	DuP process adopted for part of production.	Increased use of duP process, part of additional solution obtained from Chevrolet-Flint.	Using duP process for most plating.	Use of duP process resumed & expanded with installation of new equipment -- using some GM acid copper.	Trial solution of MacDermid copper installed but discontinued.	Using du Pont process for major part of production.		Using duP process for major part of production, but considering replacement with other processes.
BROWN-LIPE-CHAPIN	DuP process installed on experimental basis after rejection of Rochelle process.	DuP process adopted for production.	Using duP process extensively with very satisfactory results -- adopted at new Elyria plant in 1946.					DuP process partially displaced by WICO process	WICO process discontinued except for 2 small tanks -- using duP process for all other copper plating.
GUIDE LAMP	Using Rochelle process on large scale.	Experimented with duP process and adopted it for production.	Considered discontinuance of duP process due to roughness, but problems solved by duP technicians.	Using duP process extensively with satisfactory results.	Resumed commercial plating with duP process.	GM acid copper process adopted for part of production.	Use of GM acid copper increased with resulting decrease in use of duP process.	Using GM acid copper for major part of plating; duP process for balance.	Large new plating machine installed -- duP process adopted for this equipment.
FRIGIDAIRE	Very little decorative plating employed, if any -- small amount of copper plating used, but du Pont process never tried for this work.								
DELCO DIVISIONS	Some copper plating done at Delco Products, Delco Appliance and Delco Radio, but du Pont process not used at any of these Divisions.								

Identification of Processes

duP----------du Pont High Speed Copper process.
H-VW-M -------Hanson-VanWinkle Munning Co. process.
MacDermid-----MacDermid, Inc. "Rocheltex" process.
WICO----------Wire Coating and Manufacturing Company process.
Unichrome-----United Chromium Inc. process.
Day-Brite-----Dayton Bright Copper Co. acid process.
G.M.. acid-----General Motors Research acid process.
Wessex--------Westinghouse Electric Corporation process.
Rochelle------Standard cyanide process -- materials offered by several manufacturers, including du Pont.

GENERAL MOTORS CORPORATION

ORGANIZATION



E. I. DU PONT DE NEMOURS & COMPANY

APPLICATION OF PROCEEDS OF 7½% 10-YEAR BONDS, ISSUED MAY 1, 1921, FOR PERMANENT FINANCING OF OUTSTANDING OBLIGATIONS

Obligations Requiring Permanent Financing

1. E. I. du Pont de Nemours & Co.		
Amount borrowed from Christiana Securities Co., plus interest(1)	$2,826,133	
Obligation to purchase 200,000 shares of G.M. common stock from Du Pont-Nobel Co.(2)	4,000,000	
2. Du Pont Securities Co.		
One-Year 8% Bonds held by banks, plus interest(3)	20,017,778	
3. Chevrolet Motor Co.		
Notes payable to banks(4)	$5,250,000	
Notes payable to others	3,000,000	
Accounts payable	43,370	
	$8,293,370	
Less: Current assets	359,349	
		7,934,021
Total Indebtedness		$34,777,932

Application of Proceeds of 7-1/2% 10-Year Bonds

Receipts

Par value of Bonds	$35,000,000
Less: 5% discount	1,750,000
Net receipts from Bonds	$33,250,000
Cash received on dissolution of Du Pont Securities Co.	1,020,424
Total receipts	$34,270,424

Disbursements

To Christiana Securities Co. - on account of loan, plus interest	$2,826,133		
To Du Pont-Nobel Co. - purchase of 200,000 shares of G.M. common stock	4,000,000		
To banks - purchase of 8% Bonds of Du Pont Securities Co., and 20,000 shares of Du Pont Securities Co. common stock	20,217,778(5)		
To Chevrolet Motor Co.- purchase of 28,000 shares of Du Pont Securities Co. preferred stock plus accrued dividends	$2,914,489(5)		
To Chevrolet Motor Co. - purchase of 16,000 shares of Du Pont Securities Co. common stock	1,564,000(5)		
To Chevrolet Motor Co. - purchase of 184,000 shares G.M. common stock	2,024,000(5)	6,502,489	
Expenses in connection with issuing Bonds		135,600	33,682,000
Balance not used in permanent financing			$ 588,424

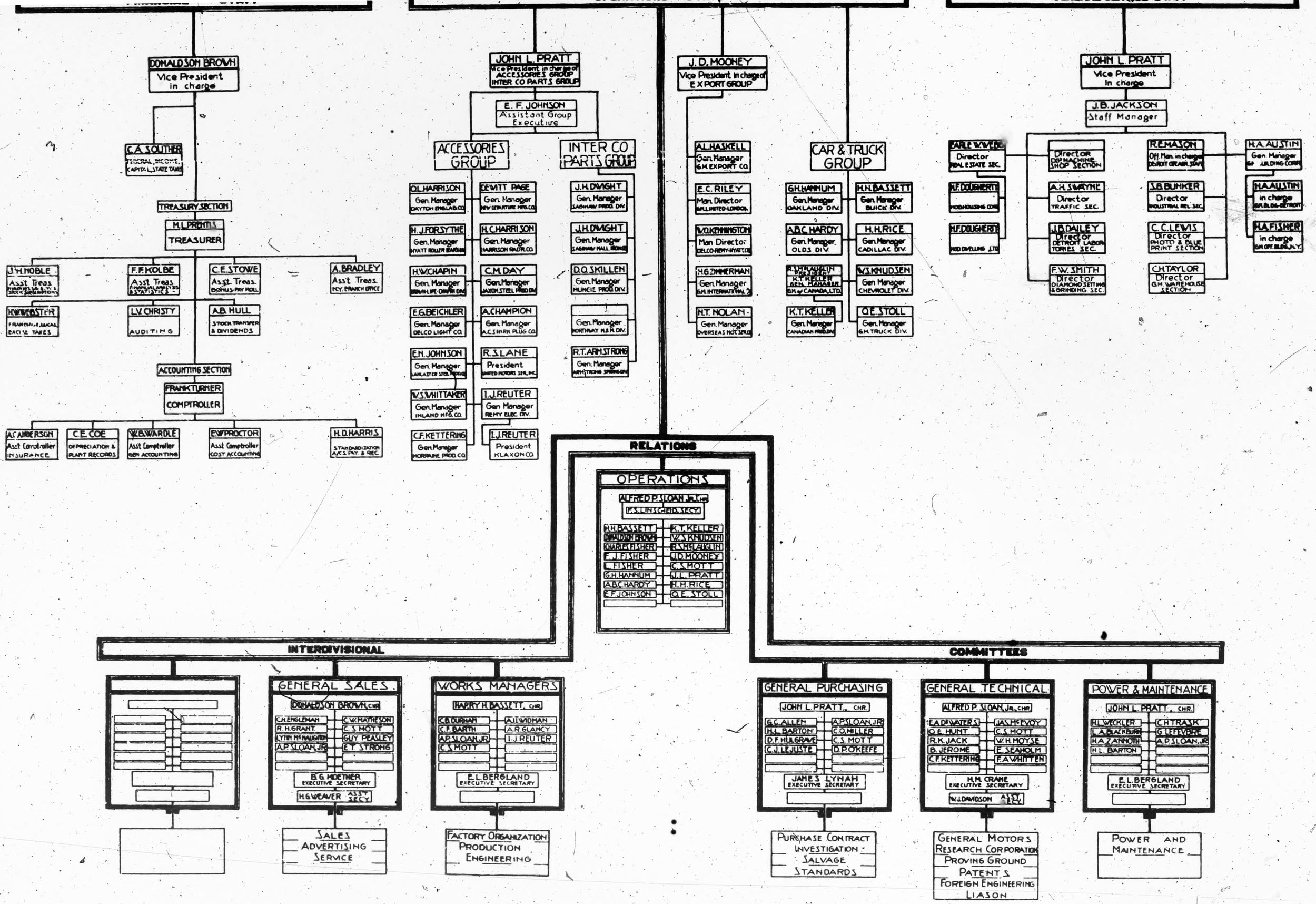
(1) The du Pont Company had borrowed $2,800,000 from Christiana Securities in 1920 and had in turn loaned $4,200,000 to Du Pont American Industries, Inc. to finance that company's purchase of $4,200,000 par value Du Pont Securities Co. preferred stock.

(2) Represents the du Pont Company's portion of 400,000 shares of the 1920 G.M. common stock issue which had originally been assigned to Explosives Trades, Ltd. but which, upon the failure of Explosives Trades to take up the shares, were purchased by Canadian Industries, Ltd. and later sold to Du Pont-Nobel Co. pursuant to an agreement that the du Pont Company and Explosives Trades would eventually relieve Canadian Industries of these shares.

(3) Represents the notes issued by Du Pont Securities Co. in 1920 to aid in financing the purchase of common stock from W. C. Durant.

(4) Represents loans made in 1920 to enable Chevrolet Motor Co. to subscribe to 350,000 shares of the 1920 G.M. common stock issue which had originally been assigned to Explosives Trades, Ltd., but which Explosives Trades had been unable to take up.

(5) These securities were immediately sold by the du Pont Company to Du Pont American Industries, Inc. in return for cash and an issue of $25,000,000 Du Pont American Industries 6% Bonds. Du Pont American Industries then held all of the outstanding securities of Du Pont Securities Co., which was dissolved on June 15, 1921.


DONALDSON BROWN
Vice President in charge
C.A. SOUTHER
FEDERAL, INCOME, CAPITAL & STATE TAXES
TREASURY SECTION
M.L. PRONTY
TREASURER
J.H. NOBLE
Asst Treas
STOCK SUBSCRIPTIONS
F.F. KOLBE
Asst Treas
C.E. STOWE
Asst Treas.
EXCHANGE-PAY ROLL
A. BRADLEY
Ass't Treas.
H.W. WEBSTER
FRANCHISE, LOCAL RACINE TAXES
L.V. CHRISTY
AUDITING
A.B. HULL
STOCK TRANSFER & DIVIDENDS
ACCOUNTING SECTION
FRANK TURNER
COMPTROLLER
A.C. ANDERSON
Asst Controller
INSURANCE
C.E. COE
DEPRECIATION & PLANT RECORDS
W.B. WARDLE
Asst Comptroller
G&M ACCOUNTING
E.W. PROCTOR
Asst Comptroller
COST ACCOUNTING
H.D. HARRIS
STANDARDIZATION A/C'S PAY. & REC.
JOHN L. PRATT
Vice President in charge of ACCESSORIES GROUP INTER CO PARTS GROUP
E. F. JOHNSON
Assistant Group Executive
ACCESSORIES GROUP
INTER CO PARTS GROUP
O.L. HARRISON
Gen. Manager
DAYTON ENG'L LAB. CO.
DEVITT PAGE
Gen. Manager
NEW DEPARTURE MFG. CO.
J.H. DWIGHT
Gen. Manager
SAGINAW PROD. DIV.
H.J. FORSYTHE
Gen. Manager
HYATT ROLLER BEARING
H.C. HARRISON
Gen. Manager
HARRISON RADIATOR CO.
J.H. DWIGHT
Gen. Manager
SAGINAW MALL. IRON
H.W. CHAPIN
Gen. Manager
BROWN-LIPE-CHAPIN DIV.
C.M. DAY
Gen. Manager
JAXON STEEL PROD. DIV.
D.Q. SKILLEN
Gen. Manager
MUNCIE PROD. DIV.
E.G. BEICHLER
Gen. Manager
DELCO LIGHT CO.
A. CHAMPION
Gen. Manager
A.C. SPARK PLUG CO.
Gen. Manager
NORTHWAY MOTOR DIV.
E.N. JOHNSON
Gen. Manager
LANCASTER STEEL PROD.
R.S. LANE
President
UNITED MOTORS SER. INC.
R.T. ARMSTRONG
Gen. Manager
ARMSTRONG SPRING DIV.
W.S. WHITTAKER
Gen. Manager
INLAND MFG. CO.
I.J. REUTER
Gen Manager
REMY ELEC. DIV.
C.F. KETTERING
Gen. Manager
MORRAINE PROD. CO.
I.J. REUTER
President
KLAXON CO.
J. D. MOONEY
Vice President in charge of EXPORT GROUP
A.L. HASKELL
Gen. Manager
G.M. EXPORT CO.
E.C. RILEY
Man. Director
G.M. LIMITED-LONDON
V.O. KNIGHTON
Man. Director
DELCO-REMY-HYATT LTD.
H.G. ZIMMERMAN
Gen. Manager
G.M. INTERNATIONAL S.A.
N.T. NOLAN
Gen. Manager
OVERSEAS MOTOR SERV.
CAR & TRUCK GROUP
G.H. HANNUM
Gen. Manager
OAKLAND DIV.
H.H. BASSETT
Gen. Manager
BUICK DIV.
A.B.C. HARDY
Gen. Manager
OLDS DIV.
H.H. RICE
Gen. Manager
CADILLAC DIV.
R.S.H. LAUGHLIN
PRESIDENT
K.T. KELLER
GEN. MANAGER
G.M. of CANADA, LTD.
W.S. KNUDSEN
Gen Manager
CHEVROLET DIV.
K.T. KELLER
Gen. Manager
CANADIAN PROD. LTD.
O.E. STOLL
Gen. Manager
G.M. TRUCK DIV.
JOHN L. PRATT
Vice President in charge
J.B. JACKSON
Staff Manager
EARLE W. WEBB
Director
REAL ESTATE SEC.
H.F. DOUGHERTY
WOODWORKING CORP.
H.F. DOUGHERTY
WOOD DWELLING LTD.
Director
CO-ORDINATING MACHINE SHOP SECTION
A.H. SWAYNE
Director
TRAFFIC SEC.
J.B. DAILEY
Director
DETROIT LABORATORIES SEC.
F.W. SMITH
Director
DIAMOND SETTING & GRINDING SEC.
R.E. MASON
Off. Man. in charge
DETROIT GREASER STAFF
S.B. BUNKER
Director
INDUSTRIAL REL. SEC.
C.C. LEWIS
Director
PHOTO & BLUE PRINT SECTION
C.H. TAYLOR
Director
G.M. WAREHOUSE SECTION
H.A. AUSTIN
Gen. Manager
G.M. BUILDING CORP.
H.A. AUSTIN
in charge
G.M. BLDG. DETROIT
H.A. FISHER
in charge
G.M. OFF. BLDG. N.Y.
RELATIONS
OPERATIONS
ALFRED P. SLOAN JR.
F.S. LINSCHEID, SECY.
H.H. BASSETT
DONALDSON BROWN
CHARLES F. KETTERING
F.J. FISHER
L. FISHER
G.H. HANNUM
A.B.C. HARDY
E.F. JOHNSON
K.T. KELLER
W.S. KNUDSEN
R.S.H. LAUGHLIN
J.D. MOONEY
C.S. MOTT
J.L. PRATT
H.H. RICE
O.E. STOLL
INTERDIVISIONAL
GENERAL SALES
DONALDSON BROWN, CHR.
C.H. ENGLEMAN
R.H. GRANT
LYTH McNAUGHTON
A.P. SLOAN JR.
C.W. MATHESON
C.S. MOTT
GUY PEASLEY
E.T. STRONG
B.G. KOETHER
EXECUTIVE SECRETARY
H.G. WEAVER
ASST. SECY.
SALES
ADVERTISING
SERVICE
WORKS MANAGERS
HARRY H. BASSETT, CHR.
C.B. DURHAM
C.F. BARTH
A.P. SLOAN JR.
C.S. MOTT
A.J. VIDMAN
A.R. GLANCY
I.J. REUTER
F.L. BERGLAND
EXECUTIVE SECRETARY
FACTORY ORGANIZATION
PRODUCTION
ENGINEERING
COMMITTEES
GENERAL PURCHASING
JOHN L. PRATT, CHR.
G.G. ALLEN
H.L. BARTON
D.F. HULGRAVE
C.J. LE JUSTE
A.P. SLOAN JR.
C.O. MILLER
C.S. MOTT
D.P. O'KEEFFE
JAMES LYNAH
EXECUTIVE SECRETARY
PURCHASE CONTRACT
INVESTIGATION
SALVAGE
STANDARDS
GENERAL TECHNICAL
ALFRED P. SLOAN JR. CHR.
E.A. DEWATERS
O.E. HUNT
R.K. JACK
B. JEROME
C.F. KETTERING
JAS. McEVOY
C.S. MOTT
W.H. MOYSE
F. SEAHOLM
F.A. WHITTEN
H.M. CRANE
EXECUTIVE SECRETARY
W.L. DAVIDSON
ASST. SEC'Y.
GENERAL MOTORS
RESEARCH CORPORATION
PROVING GROUND
PATENTS
FOREIGN ENGINEERING
LIASON
POWER & MAINTENANCE
JOHN L. PRATT, CHR.
H.L. WECKLER
I.A. BLACKBURN
H.A. ZANNOTH
H.L. BARTON
C.H. TRASK
G. LEFEVRE
A.P. SLOAN JR.
F.L. BERGLAND
EXECUTIVE SECRETARY
POWER AND
MAINTENANCE

Defendant's Exhibit (DP) No. 380

6352

4/7

COPIES:

RECD. 4/7/69

CUSTOMER	OLDSMOBILE DIVISION, G.M.C.	DATE	3/31/69
ST./NUMBER	1014 TOWNSEND ST.	REPORT NO	177
TOWN/STATE	LANSING, MICH.	CUST. CL	
PRODUCTS MFG	AUTOMOBILES	AUTHOR	HILL
MEN CONTACTED	F. WILES, PA.	DIST. OFF	DETROIT
AND TITLES	U. J. FORSYTHE AND C. E. MC DOWELL, PROCESS ENGRS.	MACH. MFR	
ELECTRO PLTG	HIGH SPEED COPPER	SERIAL NO	
CHEMICAL PLTG	WESTINGHOUSE COPPER		

IMPORTANT REPORT: ANY ADDITIONS OR CHANGES IN EQUIPMENT, ANNUAL REQUIREMENTS STATUS TYPE METH. CITIZEN PRODUCT, USE, EAT. METH. AND SUPPLIER. COVER: (1) CAPACITY (2) COMPETITION (3) NEW EQUIPMENT (4) TECHNICAL PROBLEMS (5) QUALITY AND SUPPLIES (6) NEED FOR ASSISTANCE (7) NEW DEVELOPMENTS AND PROGRAMS (8) INVENTORY SITUATION (9) OTHER ELEMENTS DISCUSSED. ASSOCIATIONS: REPORT ONLY CHANGES OR ADDITIONS SINCE LAST.

COPPER ANODES: WILES STATED THAT THEY HAD BOUGHT A CARLOAD OF COPPER ANODES FROM MEXICO DURING THE SHORTAGE AND IN ADDITION 30M LBS. FROM FEDERATED METALS CO. AS A RESULT THEY HAVE BEEN LOWERING THEIR INVENTORY BY USING UP THIS MATERIAL. THEY DO HAVE AN ORDER IN WITH ESCHER WHICH HE WILL ORDER RELEASED AS SOON AS THEY GET THEIR INVENTORY DOWN TO WHAT THEY FEEL IS A REASONABLE FIGURE. THEY ARE ALSO LOWERING INVENTORIES ON OTHER ITEMS WHICH HAVE NOT BEEN BUYING AS HEAVY AS THEY WERE A FEW MONTHS AGO.

WILES STATED THAT HE WOULD STILL GIVE DIPOINT THE OPPORTUNITY TO QUOTE ON ALL OF THEIR CHEMICAL NEEDS.

BUSINESS CONDITIONS ARE QUITE GOOD IN CENTRAL INDIANA. THEY ARE GRADUALLY INCREASING THEIR OUTPUT

6353

[redacted]

[redacted] REQUIRES THE USE OF CURRENT REVERSAL AS DOES THE DUPONT COPPER IN THEIR EQUIP-[redacted] WE MUST FIRST ALSO PUR WOOOO REQUIRED AS WELL.

[redacted] REFUSE TO GET THEIR NEW BARREL PLATING MACHINE INTO OPERATION IN THE VERY NEAR [redacted] IT SEEMS REQUIRED THAT WE BE PRESENT WHEN THIS IS STARTED IN ORDER TO GET THEM OFF [redacted] THE BEST POSSIBLE RESULTS FROM THIS BATH INASMUCH AS THEY HAVE NOT BEEN GETTING A VERY [redacted] ADVANCING DEPOSIT FROM THE OLD MACHINE AND THIS OF COURSE HAS BEEN DUE TO INSUFFI-[redacted] AND RINSING BETWEEN PLATING BATH AND ACID BRIGHT DIP, ETC. THE NEW EQUIPMENT [redacted] AND ALLOW THEM TO PRODUCE EXCELLENT BRIGHT WORK. MC DOWELL WILL CALL US A DAY OR TWO BEFORE THEY ARE READY TO START SO THAT WE CAN BE PRESENT AT THAT TIME.

[FTP]

(H151) [E]

FTP

Defendant's Exhibit (DP) No. 381

CC: R. B. K'BURG
D. W. [redacted]
J. B. HITCHCOCK

6354

E. I. DU PONT DE NEMOURS & COMPANY
ELECTROCHEMICALS DEPARTMENT

DETROIT

August 17, 1949

MR. P. R. LINDSAY, SALES MGR.
SODIUM PRODUCTS DIVISION
WILMINGTON

"COPPRALYTE" COPPER ANODES
DU PONT ZINC BALL ANODES

We were advised today by Oldsmobile that our recent quotation to them on Copper Anodes and Zinc Ball Anodes was slightly off compared to that of our competitors. Not only was our price too high, but also they were given a firm price for a longer period of time.

This same situation prevailed at Pontiac Motor, who stated that the business had been placed elsewhere.

The quantities involved were 30,000 lbs. of copper and 4,000 lbs. of zinc for Oldsmobile, and 50,000 lbs. of copper for Pontiac.

Both firms stated that other suppliers have now advised them that firm prices are no longer being quoted on these metals.

R. B. K'BURG

DETROIT DISTRICT MANAGER

By W. A. Marsh

WAM:HL

4152

Defendant's Exhibit (DP) No. 383

EXCERPT

6355

November 19, 1934.

J. C. WOODHOUSE
EXPERIMENTAL STATION

DELCO PRODUCTS CORP., DAYTON, OHIO - 11-19-34

F. L. Prescott, Gen. Mgr.; C. H. Kindl, Chief Engineer; Frank Born, Engineer; R. G. Olts, Chemist; Riesmussen, Engineer.

The writer was received very cordially by Mr. Prescott and then turned over to Mr. Kindl who, it developed later, is over Born and Riesmussen. The greater part of the day was spent with Kindl and Riesmussen, the remainder with Olts and Born. Mr. Bowen, Engineer of H. B. Co., is still at Delco so the writer was asked to avoid any direct contact with him in order that no information about du Pont fluid would get back to H.B. Co.

Born's interview amounted to several statements by Born that du Pont fluid was giving good results and they wanted to go ahead with tests as rapidly as possible. He contradicted an earlier statement when it was mentioned that Olds and Pontiac had been given samples of Delco fluid (diethylene glycol-glycerine fluid) and discouraging results had been obtained in the Lockheed type brake. Later it was learned that only one car in Dayton was equipped with du Pont fluid and practically no chemical tests had been made. The writer was unable to determine just what shift has been made in responsibility, but apparently Riesmussen, who has been with Delco not over six months, is taking care of G.M. contacts on brakes.

* * * *

Kindl said practically no chemical work has been done on fluids at Delco and that they had but little background for the work. Kindl and Riesmussen themselves seemed to know little about the properties of Lockheed or Chrysler fluids. They feel that the price advantage will be the biggest talking point in going to G.M. units because they and G.M. think that Blue Can fluid is satisfactory in all respects. The improved performance of du Pont fluid at high and low temperatures was admitted but considered as not highly important. This is probably due to the short time test cars have been run and the moderate temperature in Dayton area used for testing.

* * * *

4153

63356

It developed that Delco still thinks they have a good fluid for the Kelsey system. This indicates that if G.M. makes a change that Delco will boost their fluid in preference to du Pont to the G.M. units. The biggest objection to Delco fluid, assuming they correct the corrosion, etc., is that it is not compatible with Lockheed fluids. The introduction of such a fluid might cause an endless amount of trouble between Chrysler and G.M. cars.

* * * *

CHEMICAL DIVISION

Arthur G. Weber

Defendant's Exhibit (DP) No. 384

EXCERPT

6357

J. C. Woodhouse

REPORT FOR THE WEEK NOV. 26-NOV. 28, 1934

* * * *

II. Brake Fluids

Outside Contacts. Weber has remained full time on outside contacts including this week further contacts with Steeldraulic, Reo and Chrysler and continued contact at Delco and General Motors Research Laboratories. Chrysler now reports that their stroking tests have been completed with satisfactory results. Reo's Engineering Dept. and Purchasing Div. have assured us that they will use completely our fluid despite threats by the Hydraulic Brake Co. as to the consequences if they do this. Contacts at General Motors Research Laboratories have been less satisfactory than anywhere else, in fact only there have we met other than a cordial reception.

All outside results obtained with our fluid continue to show it satisfactory and to make favorable comparison with Blue Can fluid.

* * * *

/s/ John C. Woodhouse

JOHN C. WOODHOUSE

4155

E

Defendant's Exhibit (DP) No. 385

EXCERPT

63358

NOVEMBER 23, 1934.

J. C. WOODHOUSE
EXPERIMENTAL STATION

GENERAL MOTORS RESEARCH LABS. - NOV. 22, 1934
L. B. CASE, T. P. CHASE AND V.J. CASTROP

Mr. Rasmussen and the writer went directly from the Oldsmobile plant to G.M.R.L. After a preliminary conference between Case and Rasmussen, in which Rasmussen told of Delco's interest in du Pont fluid, the writer discussed briefly the developments of the last several months.

* * * *

Case became very much interested asking the composition of our present fluid, etc. When the writer refused to give this, Case indicated that it could be easily obtained through the proper channels when the time came. The writer assured Case that we would give him every bit of information we have at the present time regarding the properties of the mixture but that the compositions could not be given him until some later time when our patent position on this class of fluids is firmly established. Further remarks by Case indicated that the major portion of the residue of F-4 (after distillation of the isobutanol) had been analyzed as castor oil because they had obtained a positive qualitative test for the ricinoleyl radical. (Probably 75% of this material was glycol and glycerine.) Case's interest in our lubricant and fluid composition was probably due more to a desire to improve a fluid G.M. is developing rather than to assist him in properly evaluating our fluid. This was inferred in a statement made by Rasmussen on the return trip to Dayton. It appears that when Rasmussen approached Case to get work done on du Pont fluid, Case tried to sell him on another fluid.

* * * *

CHEMICAL DIVISION

Arthur G. Weber

4156

E

Defendant's Exhibit (DP) No. 386

EXCERPT 6359

December 12, 1934.

J. C. WOODHOUSE
EXPERIMENTAL STATION

DELCO FLUID TESTS - FLUID RESULTS

Final rubber swelling measurements were made late Dec. 11th after completion of all routine laboratory testing*. Tentative arrangements had been made for a morning conference with Mr. Kindl (Chief Engineer), Mr. Rasmussen (Brake Engineer), Mr. Olts (Engineer in charge of testing) on Dec. 12th. An unexpected call to Detroit Dec. 12th made it impossible for Mr. Kindl to be present.

The conference was opened by Rasmussen asking Olts whether he had changed his mind about du Pont fluid. Olts' answer was: "Frankly, I started work with a strong prejudice against du Pont fluid, but, unless something unexpected develops in the practical tests, I am convinced that du Pont fluid has many technical advantages over Blue Can fluid". This statement was followed by a detailed explanation of all the data on rubber, distillation, cold tests, etc. for du Pont and Blue Can fluid.

* * * *

Olts went to great length to explain the unstable character of Blue Can fluid to Rasmussen. He pointed out that the sample examined was the very best obtainable since it had been obtained directly from Wagner in St. Louis. He showed distillation results from an average sample purchased at a Wagner Service Station, and also results on a sample that had been standing on the shelf several months to prove that Blue Can fluid breaks down on standing without heating. The low viscosity of our fluid was referred to by Olts as a decided advantage except that it might cause noise in the master cylinder if an orifice type pressure compensator is used in place of the present Lockheed type. Rasmussen suggested that the advantages would outnumber the disadvantages.

Questions of how best to hasten the adoption of the fluid by the various units of G.M. were discussed next. Rasmussen said that thus far nothing but favorable reports have been received. A quicker response was quite noticeable with du Pont fluid since the beginning of the cold spell.

- - - -

4157

*Corrosion tests in bottles will be continued indefinitely.

6360

This had been reported by Pontiac as well as by local test car. Another report had come in that there was less variation in pedal height with temperature changes with du Pont than with Blue Can fluid. This goes back to pressure drop in the lines at low temperature rather than expansion of the fluid.

Rasmussen said that Mr. Leach, in charge of tests at Pontiac, would be in Dayton Dec. 13th and that he would be shown the Delco data together with the actual cold tests and rubber tests. Olts is to write a report and send it to Pontiac, Oldsmobile and L.D. Case, G.M.R.L. This is to be followed in a week or so by another visit by Rasmussen. Rasmussen said he thought he could push the adoption of our fluid by G.M. with more success than we could by going directly to them. He agreed, however, to let us know immediately if anything comes up such that we can be of any assistance. According to Rasmussen, Chevrolet and Buick are too busy with other things to think of fluid just now. It was his opinion that these units will follow with little hesitancy anything that has proven satisfactory for Olds and Pontiac.

* * * *

CHEMICAL DIVISION

Arthur G. Weber

4158

REASONABLE FIGURE. TEST ARE ALSO LOW ON INVENTORIES ON OTHER ITEMS HOUSE HAVE NOT BEEN BUYING AS HEAVY AS THEY WERE A FEW MONTHS AGO.

WILES STATED THAT HE WOULD STILL GIVE DUPONT THE OPPORTUNITY TO QUOTE ON ALL OF THEIR CHEMICAL NEEDS.

BUSINESS CONDITIONS ARE QUITE GOOD IN THIS PLANT. THEY ARE GRADUALLY INCREASING THEIR OUTPUT FROM WEEK TO WEEK. ANTICIPATE A VERY GOOD YEAR.

<u>COPPER PLATING:</u> AS REPORTED IN OUR LAST REPORT ON OUR PREVIOUS CALL HERE THEY WERE CEASING THE OPERATION OF THEIR ACID COPPER BATH. THIS HAD BEEN IN OPERATION ON TRIAL IN THEIR LARGE PRODUCTION PLATING BATH. AT THAT TIME THEY ANTICIPATED CONVERTING BACK TO DUPONT COPPER. HOWEVER IN THE MEANTIME ARRANGEMENTS WERE MADE FOR A TRIAL OF THE FERROCYANIDE COPPER SOLUTIONS. FOUND FROM THAT THEY WERE JUST SCRAPING THIS BATH TO BE LAST MONTH OPERATED THIS AND APPARENTLY MADE A FULL TRIAL OF THIS PROCESS PRIOR TO CONVERTING BACK TO HIGH SPEED COPPER. THEY FEEL THAT IT HAS ANY ADVANTAGES OVER HIGH SPEED COPPER IN GIVING THEM A MORE RAPID DEPOSIT OR SMOOTHER DEPOSIT OR BUMPER BARS THAT IT IS NOT WORTHWHILE.

WE DISCUSSED THE POSSIBILITY OF [illegible] AND MC DONNELL [illegible]

Defendant's Exhibit (DP) No. 387

EXCERPT

63361

August 2, 1935

J. C. WOODHOUSE
EXPERIMENTAL STATION

DELCO PRODUCTS COMPANY, DAYTON, OHIO

O. Rasmussen, J. Martin Kelly and
R. A. Winefordner.

When the writer arrived at Delco July 30th, it was found that Mr. Rasmussen was in Detroit and expected to return early July 31st.

* * * *

When Rasmussen returned, a day later than planned, he put up the argument that Delco has no further interest in du Pont fluid and for this reason Delco shouldn't put themselves out testing the fluid. The writer pointed out that the fluid is a very important part of the brake and that Delco should be interested in the performance of any fluid that might be widely used in their brakes regardless of who sells it. Furthermore, it wasn't a question of starting testing but merely recording observations of a test already completed. In order that Delco might not be out anything, the writer offered to stand the cost of garage work and new parts to replace those taken from the cars.

After some further discussion, Rasmussen agreed to open the cars. He wrote up the necessary work order on the garage, and made arrangements for getting the cars. It was then learned that the garage was very busy overhauling the Company trucks. This work is done each year and is timed to coincide with the period that the plant is shut down for retooling. No other work is accepted by the garage until the overhauling is completed in order that the trucks will be ready in time. When this was learned an attempt was made to have the cars taken to a local garage but Rasmussen would not permit this.

* * * *

During the discussion, Rasmussen said that all the cars in which du Pont fluid was originally installed, were still running and that there have been no troubles reported. It was his belief that all cars originally contained diacetone

fluid and this fluid was pumped out of the system and du Pont fluid installed without using new hydraulic parts. Apparently Mr. Olt has the detailed information regarding the practical tests.

During the discussion Rasmussen stated that Delco would have no further interest in du Pont or any other new fluid for a year, and added that Delco had already arranged for their requirements of castor oil for General Motors. In an earlier discussion with Winefordner (Materials Engineer), he mentioned that chemists from Spencer-Kellogg and Baker had been in Dayton about two weeks ago. Although not definitely stated, it appears that Delco is going to use Baker's castor oil. Weinfordner said that Delco service fluid is at present being mixed in 20 gallon batches but that arrangements will have to be made soon for handling larger quantities.

* * * *

CHEMICAL DIVISION

Arthur G. Weber

Defendant's Exhibit (DP) No. 388

6363

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON DELAWARE

AMMONIA DEPARTMENT
CHEMICAL DIVISION
EXPERIMENTAL STATION

Copies to:

J. A. Alsquist
R. W. McClellan
M. H. Morriss

January 14, 1936

J. C. WOODHOUSE
EXPERIMENTAL STATION

HYDRAULIC BRAKE FLUIDS
OLDS MOTOR COMPANY
LANSING, MICH., 1/11/36

Mr. Dernier, Purchasing Agent.

Mr. Goldsmith of the F. & F. Flint Plant arranged that Mr. Dernier was to put the writer in touch with the Oldsmobile engineers interested in hydraulic brake fluids. On arriving at Mr. Dernier's office he immediately asked about the price and advantages of No. 21 fluid over the fluid they are now using. He was told the price would be approximately 95¢ per gallon in tank car quantities and informed of the various advantages, including superior low temperature properties and stability. He then called Mr. Wolfram, Assistant Chief Engineer, and asked him if he would like to talk to the writer about No. 21 fluid. During the conversation Mr. Dernier mentioned to Wolfram that the price structure was right. However, Mr. Wolfram was apparently not interested. Under these circumstances Dernier suggested that the best thing to do was for me to send him a definite quotation on No. 21 fluid and a letter setting forth the advantages and points of equality of No. 21 fluid compared with No. 5 fluid. If the price was satisfactory he would then attempt to obtain some action from the Engineering Department.

K. E. Walker

K. E. WALKER.

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Defendant's Exhibit (DP) No. 389

EXCERPT

6364

January 14, 1938

J. C. WOODHOUSE
EXPERIMENTAL STATION

HYDRAULIC BRAKE FLUIDS
CHEVROLET MOTOR COMPANY
DETROIT, MICH., 1/12/38

Mr. L. A. Chaminade, Chassis Engineer.

Mr. Chaminade was told of our discussion on our brake fluids with Mr. Crawford, his superior, and the possibility of our sending a sample of a cheaper fluid for test was mentioned. He asked for and was given the approximate properties of such a mixture compared with present No. 21, No. 5 and Chrysler fluids. He appeared interested and agreed to test such a mixture as time permitted. He did, however, state that he believed if we submitted a more satisfactory fluid at a cost equal to their present fluid, Delco would immediately cut the price of No. 5 fluid.

During the course of the conversation, Chaminade remarked that the boiling point of No. 21 fluid (240°F.) was considerably above any temperatures which they encountered in their brake systems. He stated that he wished Chevrolet would use No. 21 fluid but was afraid it would not be authorized as long as there was a price differential. His desire to use it was because he believes some time Winters will be severe enough to give them considerable trouble with diacetone mixtures. He has previously stated, however, that until that time the Purchasing Department could not be convinced to pay more money for a premium product.

* * *

/s/ K. E. WALKER

K. E. WALKER

4162

Defendant's Exhibit (DP) No. 390

EXCERPT

63365

August 8, 1938

J. C. WOODHOUSE
EXPERIMENTAL STATION

BRAKE FLUIDS
GENERAL MOTORS RESEARCH LABS.

Mr. L. B. Case, Chemist.

Case said he was not in a position to give information on Delco No. 9 fluid or the Delco closed brake system. He has examined the No. 9 fluid very thoroughly and knows all about it but has not as yet been given permission by Delco to discuss this information. He said there is a feeling among G.M. engineers that a higher boiling fluid is required for truck and bus use but he is not willing to vouch for the evidence proving this need because he received it about fourth hand and therefore believes it may have been distorted by the time he heard of it. As far as he knows boiling point of No. 5 and No. 21 are satisfactory for passenger car use and No. 21 is satisfactory for all low temperature operation in Canada except possibly it might require some further dilution if temperatures below -50°F. should be encountered as happens occasionally in northern Canada. Case had no fault to find with No. 21 except the report that it had gassed in some heavy duty service.

* * * *

In discussing limiting values of brake fluid properties Case mentioned that their studies had led them to believe about 210°F. was a satisfactory boiling point for passenger car service, that a rubber swelling somewhat below that of Chrysler fluid and a maximum viscosity of 5000 to 6000 secs. was also to be considered as limiting values for proper operation. It is evident that as their knowledge of brake fluids increases their requirements for a satisfactory fluid also become less severe.

* * * *

/s/ K. E. Walker

K. E. WALKER

4163

E

Defendant's Exhibit (DP) No. 391

DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON DELAWARE

AMMONIA DEPARTMENT
CHEMICAL DIVISION
EXPERIMENTAL STATION

Copies to:
J. A. Almquist 63866
R. W. McClellan
E. D. Ries

TEMPORARY
[illegible]

August 10, 1938

AUG 16'38

J. C. WOODHOUSE
EXPERIMENTAL STATION

BRAKE FLUIDS
OLDS MOTOR COMPANY
LANSING, MICH., 8/5/38

Mr. Dernier, Purch. Agent, and Mr. Wolfram, Ass't. to Mr. Youngren, Chief Engineer.

Mr. Dernier said they were not interested in our quotation of $1.00-1/2 per gallon F.O.B. Belle given them last January but would like to have another quotation for next year's production from us in about 10 days, that is, about August 15. Delco No. 9 fluid has been released by the Engineering Department for 1939 production but it has not as yet been specified by Dernier. The writer mentioned to him that we expected to have a somewhat cheaper No. 21 type fluid in the very near future but he showed no particular interest. It appears probable that Dernier is interested in getting our quotation only to use on Delco to keep their fluid costs at a minimum.

Mr. Wolfram in the Engineering Department was also visited. He confirmed Dernier's statement that Engineering had released No. 9 for 1939 production. He did not seem to know much about No. 21 fluid properties and said they would not be interested in it unless we could show a real advantage in price and performance. They have already told Delco they would use No. 9 and Delco have installed equipment and planned production operations on that basis. If this is true it doesn't make much difference whether we quote Oldsmobile or not especially before we have released an [illegible] fluid.

E. E. WALKER

4164

NOTE: Four lines of illegible handwriting appear under date line.

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Defendant's Exhibit (DP) No. 392

63667

EXCERPT

J. C. WOODHOUSE
EXPERIMENTAL STATION

BRAKE FLUID
PONTIAC MOTOR CO., PONTIAC, MICH. 8-4-38

Mr. A. E. Leach, Engineer

No tests were made with the samples of No. 21 and F-514 E.G. fluids sent them last January because Delco No. 9 fluid was released for production shortly after that time. No tests were made on the No. 9 fluid, it being released on the basis of tests and data of other G.M. units. Use of No. 9 in production will cost Pontiac about 1/2¢ more per car than No. 5 fluid assuming about 10 cars per gallon of fluid and no waste during bleeding operations. On this basis Delco No. 9 costs about 5¢ more per gallon than No. 5.

Delco have not given Leach any comparison of No. 9 and No. 21 fluids. He thought the boiling point of No. 9 was about 230°F., very close to No. 21, and that the other properties were also very close to those of No. 21. The increased fluid cost over No. 5 is justified only because it provides the customer with a universal fluid. They had no gassing or low temperature troubles with No. 5 but it was necessary to use two diacetone mixtures to cover the temperature range. No. 9 is now being used in production and will be used in 1939. According to Leach No. 9 has been released for production use by all G.M. units except Chevrolet. He thinks they will continue to use No. 5 because of price.

When questioned about the distribution of No. 9 for service, Leach said Delco had promised it would be available generally by the time the 1939 cars are out but he felt it was somewhat doubtful that Delco would keep this promise. No. 9 will probably be retailed by both United Motors Service (Delco) and G.M. Parts Corp. Sale of No. 5 for service is expected to be discontinued.

* * * *

4165

Defendants' Trial Ex. No. 8

6368

Leach said there was no reason why they would not use No. 21 fluid in place of No. 9 if we could sell it to them at a lower price than No. 9. In the future the proper procedure for handling this will be to quote the Purchasing Dept. a price for No. 21. If this is less than Delco No. 9 they will request an examination of the former by the Engineering Dept. If the Engineering Dept. approves the fluid, Purchasing would undoubtedly buy it instead of the No. 9 fluid. While Leach may not know the attitude of the Purchasing Dept. as well as he thinks, it appears reasonable because Pontiac people have never indicated that they were particularly friendly with Delco.

* * * *

/s/ K. E. Walker

K. E. WALKER

4166

Defendant's Exhibit (DP) No. 393

63369

Copies to:

R. W. McClellan
E. D. Ries

September 12, 1938

J. C. WOODHOUSE
EXPERIMENTAL STATION

No. 21 Brake Fluid
Telephone Conversation with Mr. Nyland,
Engineering Department, Buick Motor Co.
Flint, Mich., 9/9/38

The writer told Mr. Nyland that in our conversations with him we understood that he realized our No. 21 fluid was identical with Lockheed No. 21 fluid and since the latter had been widely distributed and used for the past three years would approve it for production use when the price justified. Mr. Nyland said that at the beginning of 1938 they had tested No. 21 in the laboratory and found it satisfactory and had started car tests, but before these tests were completed Delco No. 9 was introduced at a lower price and hence nothing more was done on No. 21. On the basis of their tests to date, he personally would dare to approve No. 21, but stated that it was impossible for the Engineering Department to do this without first having a sample of the fluid in their hands and secondly having some actual car test results to refer to. If the latter rule was not complied with and any trouble developed with No. 21 fluid, the Engineering Department would be severely criticized. He requested that a gallon sample of No. 21 fluid be sent

him as soon as possible in order that car tests could be started and said that after receiving the sample only a very short period of time would be required for him to approve the fluid.

All the various automobile companies that have used No. 21 in new car production were enumerated, including G. M. Truck. Approval by Chevrolet was also mentioned. Mr. Nyland was asked if on the basis of this information he would be able to hasten his approval of No. 21 fluid. He again stated that he could not approve No. 21 solely on the information above, but would be in a position to approve it very shortly after receiving the sample of fluid. This was sent to him by the fastest way possible from the Belle Plant on September 9.

Another telephone call is planned in the near future to be sure that he gives it his immediate attention.

K. E. WALKER

KEW:ec

NOTE: "Temporary - Perm. nent" is stamped under date line; a line is drawn through "Permanent." "Sept. 14 '38" is stamped in right hand margin.

Defendant's Exhibit (DP) No. 394.

6371

EXCERPT

December 23, 1938

J. C. WOODHOUSE
EXPERIMENTAL STATION

NO. 21 BRAKE FLUID - VISIT TO GENERAL MOTORS RESEARCH LABORATORY, DETROIT DECEMBER 19, 1938

Mr. L. B. Case, Chemist

The results on boiling point and viscosity of No. 21 vs. Delco No. 9 fluid given in Case's recent General Motors' report were discussed with him. He admitted that his value of 230°F. for the boiling point, compared with our value of 237°F., might be in error by at least 5°F. due to the personal factor which enters into the method used. He also admitted that his low temperature viscosity results obtained by extrapolation of data at room temperature might be in error. In any event, he felt that his data were sufficiently accurate for the purpose.

Although he did not know the composition of No. 21 fluid had been changed from F-227 mixture to F-478 mixture in May of 1937, he was satisfied that our present fluid should be as good as the previous mixture. Data given for No. 21 fluid in the above-mentioned report were obtained with our present mixture since he purchased the fluid early in 1938 at a local supply house.

In regard to the higher boiling point of No. 9 fluid compared with No. 21, he admitted that the difference was slight but felt that the higher boiling point was a step in the right direction. Some tests which they have conducted showed, under rather severe conditions, a maximum temperature of 183°F. in passenger car wheel cylinders and 213°F. in truck wheel cylinders. While these temperatures are well under the atmospheric pressure boiling point of No. 21 fluid, Case said that in heavy bus service they believe temperatures are apt to run much higher than this figure. Since he does not feel that the master cylinder check valve can be depended upon to maintain a constant back pressure of 8 lbs., the highest boiling fluid is most desirable, at least in bus service. He therefore felt his statement in the above-mentioned

General Motors' report that Delco No. 9 fluid was superior to No. 21 because of its higher boiling point was justified, although he agreed that No. 21 might be perfectly satisfactory in the great majority of cases.

* * * *

/s/ K. E. Walker

K. E. WALKER

Defendant's Exhibit (DP) No. 395 6373

E. I. DU PONT DE NEMOURS & COMPANY
Incorporated
WILMINGTON, DELAWARE

Ammonia Department
Chemical Division
Experimental Station

Copies to:

R. W. McClellan
E. D. Ries

December 29, 1938

J. C. WOODHOUSE
EXPERIMENTAL STATION

NO. 21 BRAKE FLUID
PONTIAC MOTOR DIVISION
PONTIAC, MICH., 12/20/38

Mr. Leach, Chassis Engineer, located at Experimental Plant, and Mr. Gorden, Purchasing Agent for Hydraulic Fluids, located at Main Production Plant

Leach said they were using Delco No. 9 fluid in production because of its higher boiling point compared with No. 21 and better stability and low temperature operation compared with No. 5. He brought up the usual illustrations about gassing troubles with No. 5 fluid in taxicabs, trucks and busses and said that use of No. 9 fluid corrected all this. He finally admitted they had no evidence showing that No. 21 would not have been just as satisfactory as No.

4171

9. The reason for using No. 9 eventually came to light. All GM Engineering Units agreed to approve No. 9 for all production so that Delco could afford to produce it at a reasonable price. No. 9 costs about 8¢ more per gallon that No. 5, which was taken care of by the GM production units paying 4¢ more per gallon than for No. 5 and Delco taking a 4¢ loss per gallon. The new equipment costs required to produce No. 9 fluid are to be written off in a year, after which Delco expects to reduce the fluid price to about that of No. 5 fluid which is still higher than the latest No. 21 price. Because of this promise made before the No. 21 fluid price was reduced, GM engineers have been reluctant to use No. 21 and have given the boiling point argument for support. They admit that the boiling point difference is slight (20°F.), but say it is a step in the right direction.

When told of Mr. Gorden's interest in No. 21 because of its lower cost than either No. 5 or No. 9, Leach said he would have to discuss the matter with Mr. Anibal, Chief Engineer, in a week or so to see whether he wanted to sacrifice the 20°F. boiling point to save the 1¢ per car possible when using No. 21. Pontiac made no tests with the No. 21 sample sent them last January so Leach was told

of the difference between our present F-478 composition and the F-227 composition of several years ago. He did not feel that this change would require additional car tests before approving No. 21 and said that there was sufficient experience with No. 21 in service use that they would approve it at once if Mr. Anibal agreed it was desirable on the basis of price. Leach will wait for Gorden's request for action on No. 21 fluid before announcing whether they will approve it.

The writer then discussed the matter with Mr. Gorden who agreed Leach appeared partial to No. 9 fluid. The writer explained the reason for this and told Gorden he would probably have to bring pressure to bear on Leach to obtain approval of No. 21 fluid. Gorden promised to send Leach the sample of fluid forwarded from Belle December 19 as soon as he received it with a request for action on its approval for production. If no answer is received from Pontiac by January 1, they should be contacted again by phone.

K. E. Walker

K. E. WALKER

KEW:ec

NOTE: A line is drawn through "R. W. McClellan-E. D. Ries". Illegible handwriting appears above date line. "W" is written across "J. C. Woodhouse". "30 Hydraulic 118" and an arrow pointing to "Pontiac Motor Division" is handwritten. "T" is written under date line. "Temporary-Permanent" is stamped in right hand margin; a line is drawn through "Permanent". "Jan 3 1939" is stamped in right hand margin.

Defendant's Exhibit (DP) No. 396 63376

March 24, 1939

Mr. J. D. Eby, Purchasing Agent
Wagner Electric Corporation
6400 Plymouth Avenue
St. Louis, Mo.

Dear Mr. Eby:

Your letter of March 15 was duly received and reply delayed in order that the interested parties here could discuss the subjects raised in your letter.

In reply to the first paragraph of your letter we agree with you that nothing can be gained at the moment by our attempting to sell fluid in the Detroit area and for the time being at least we will make no further effort along this line.

The low price we made of 91¢ was pretty promptly met and unless the price of "21" is reduced to the point where either you or ourselves, and probably both, would be somewhat hurt, I don't think we can do much about it. Since Delco is in the fluid business and has corralled practically all of General Motors business, it is going to be a difficult matter for us to get any General Motors business.

I note your remarks about the material costs of #5 and #21 fluid with normal butyl substituted for isobutyl alcohol. I haven't tried to check those costs because we don't know exactly what normal butyl can be purchased for to be put into brake fluid. Unless there is a special price for this use we can say off-hand that your 63¢ per gallon is entirely too low.

Regardless of what costs of the various fluids are it is quite apparent now, as it has been for sometime, that our

job is to develop a fluid comparable in boiling point and price with any fluid on the market and of course without getting into patent difficulties. It is to this end we are working and while we have a couple encouraging leads it is a pretty difficult job, but I don't believe we are too optimistic in the hope that we may have something more definite along this line within the next 60 or 90 days.

With kindest personal regards, I am

Sincerely yours,

AMMONIA DEPARTMENT
Director of Sales

RWM:HMM

NOTE. "Permanent-Temporary" stamped twice on first page, and once on second. "File Copy" stamped across face of each page of letter.

Defendant's Exhibit (DP) No. 397

EXCERPT

6378

April 2, 1940

J. C. WOODHOUSE
EXPERIMENTAL STATION

MME BRAKE FLUID
CHEVROLET MOTOR DIVISION, DETROIT, 3/27/40
MR. L. A. CHAMINADE, ENGR. IN CHARGE OF BRAKES

Chaminade was very interested in the properties of M-376 high boiling fluid (Sample No. E-9373), but confirmed statements of other GM engineers that Delco No. 9 has been operating satisfactorily hence they would not buy a higher boiling fluid if it cost more than No. 9. None of the engineers would indicate what they were paying for No. 9 fluid but in 1938 with low castor oil prices Pontiac indicated they were paying about 95¢ per gallon, which was a few cents more than No. 21 quotations. Chaminade will do no more than make laboratory tests on the sample supplied him unless we quote a price on an MME fluid competitive in price and properties with No. 9.

* * * *

/s/ K. E. Walker

K. E. WALKER

4176

Defendant's Exhibit (DP) No. 398

EXCERPT

6379

May 6, 1940

J. C. WOODHOUSE
EXPERIMENTAL STATION

MME-CO BRAKE FLUID
DELCO BRAKE DIVISION, DAYTON, OHIO
APRIL 25, 1940

Mr. O. Rasmussen, Chief Engineer.
Mr. Bishop, Brake Fluid Chemist.

Summary

Delco's laboratory tests were interpreted by Mr. Bishop, Delco Chemist, as indicating M-376 (35 CO partially reacted, 65 MME) fluid definitely superior to No. 9 fluid in boiling point, flash point and odor; slightly inferior in viscosity, water tolerance, break-down temperature of lubricant, effect on rubber and low temperature properties; and at least equal in corrosiveness. In Delco tests M-376 froze after 4 days at -40°, instead of meeting their specification that it remain fluid for 5 days at this temperature. The same material was fluid after 4 days at -40° in our refrigerator and it is known that it can be made to remain fluid for 5 days if necessary. Rasmussen admitted the properties classed as inferior to No. 9, with the possible exception of the freezing point, were satisfactory enough for him to approve M-376 for practical tests providing it was competitive with No. 9. Unless high temperature troubles develop with their present fluid, they will pay no more for a higher boiling fluid. Rasmussen feels present Delco fluid boiling point provides no safety factor, especially in trucks and buses, hence they may be forced to change to a higher boiling fluid in the near future.

* * * *

Rasmussen pointed out they would want to produce their own fluid so the next move for us was to quote Mr. Weyer, Delco Brake Purchasing Agent, on MME and an alcohol-MME mixture which might be competitive with n-butanol at an indicated price of 8¢ per pound. This is to cover two alternatives: (1) the use of MME as the only solvent to make a high boiling fluid when and if necessary, and (2) to provide

4177

a replacement for n-butanol in present No. 9, the resultant fluid having improved boiling point and possibly viscosity. The advisability of further work on MME fluids by Delco will be based on these quotations.

* * * *

Delco's examination of M-376 was sufficiently favorable to make them interested in the price of MME. It may be difficult to show sufficient advantages for a MME-alcohol solvent to convince Delco to replace n-butanol with such a mixture, but in any case it will insure that MME receives consideration at the start if Delco finds higher boiling fluids necessary. The n-butanol is now being purchased from Carbide and Rasmussen expressed the possibility that if they stop purchasing n-butanol, Carbide might suddenly decide the price of the glycol lubricant would have to be increased, thus eliminating any price advantage which a MME-alcohol mixture might have.

/s/ K. E. Walker

K. E. WALKER

Defendant's Exhibit (DP) No. 399

6381

VOLUME OF BRAKE FLUID PURCHASED
BY GENERAL MOTORS DIVISIONS
FROM MORAINE PRODUCTS DIVISION
(FORMERLY DELCO PRODUCTS)

1936 - 1951

	Dollar Volume	Gallons
1936	294,980	199,000
1937	374,897	260,000
1938	341,294	305,000
1939	557,619	498,000
1940	580,510	518,000
1941	885,253	790,000
1942	Unavailable	Unavailable
1943	Unavailable	Unavailable
1944	Unavailable	Unavailable
1945	Unavailable	Unavailable
1946	494,372	274,651
1947	1,879,761	959,061
1948	2,490,353	1,203,069
1949	1,383,300	674,780
1950	2,080,938	1,250,410
1951	3,242,729	1,491,596

Source:

Cost Analysis Section
General Motors Corporation

E. I. DU PONT DE NEMOURS AND COMPANY

Sales of Cellulose Acetate Molding Powder

1937 through 1947

Year	Sales To All Customers	Sales to the Inland Manufacturing Division of General Motors
1937	$ 312,354	$ 1,241
1938	359,062	39,997
1939	781,877	157,188
1940	730,196	102,248
1941	1,022,531	4
1942	630,639	0
1943	638,405	0
1944	842,091	0
1945	699,583	0
1946	535,671	0
1947	308,756	0

Prepared from Company records
Treasurer's Department

Defendant's Exhibit (DP) No. 401

L. H. DEAKYNE
C. H. HUNTON

AIR MAIL

Arlington, N.J.
June 7, 1939

TO: J. M. MACK

FROM: H. A. ROSLEY

1940 PONTIAC WHEEL COLOR

Enclosed herewith please find a section of a steering wheel used by Buick in 1939 made from Tenite No. 1556. The general color for the 1940 Pontiac is to be this general shade. We have, however, been advised by Mr. C. H. Hunton that certain changes are being made with respect to the thickness of the plastic covering to be put over the steel insert. We quote the following from a letter just received from Mr. C. H. Hunton:-

> "Now a certain color effect is secured by using this thick covering of plastic, however, Pontiac will use this color on their 1940 steering wheels. Now the new Pontiac has a thin Plastic covering so that Pontiac 1940 wheels molded from Tenite 1556 are not this color when finished. It appears now that Tenite will have to dope up the density on the more opaque side to arrive at the same color effect shown in this wheel section.
>
> Mr. Milner of Pontiac Motor Division today stated that this was something Inland Mfg. Division would have to work out with either Tenite or Plastacele.
>
> Milner emphatically stated that he had given Inland Carte Blanche on this problem and suggested we work it out with Inland as he specified only this color effect and doesn't give a damn if the wheel is produced from Plastacele or Tenite."

We believe it would be a good plan for you to use this half steering wheel section enclosed herewith for your reference and that you try and obtain definite information from Inland as to what thickness of plastic they intend to use on a 1940 Pontiac wheel and with this information we will have our Color Lab run some small insert rod tests to submit to Inland through you until a suitable density has been obtained.

4181

6:38 1.

2.

The most important thing that we obtain now is some definite information as to how thick a covering will be needed for this new 1940 Pontiac wheel, as it will be on this information that we will base our development work.

Awaiting information from you at your earliest possible convenience.

P.S - sent Int'l. & # K86011
on 5/24 - no info in ref to

HAR:MH

4183

Defendant's Exhibit (DP) No. 402

6385

DU PONT

9-19-39 193_

L H Weakley

Jm mack Inland

I went after OB today for an order on Chevrolet and Pontiac. He was not ready to buy; may this week, possibly Friday, and Jm coming back purposely from Detroit to be in Dayton Friday to see if I can't pick off an order.

This account, as you may have noticed, takes almost 50% of my entire time & has past month or more.

Carl Ours expects to make one here Friday

NOTE: "170° - broke
160° - Orange Peel - 6 o'clock"
is handwritten on the back. "E. I. DUPONT DE NEMOURS & CO., Inc. ARLINGTON, N.J. RECEIVED SEP 21 1939 PLASTIC SALES" is stamped on the back.

4183

Defendant's Exhibit (DP) No. 403

6386

DU PONT

10-23 193_

L B Gillis

Jm Mack Inland

PS see my FR 252 today

Im a bear for punishment & phone Geo Shroyer to ask his cooperation in seeing that the remaining 1600# Chev. of ours is sun this week: said he would, and then hit me with a golf game. Im not adverse to golf but Im got stacks of detail to attend to. But Im going for 4 holes. Shroyer can do us a lot of good & Im going to try to prevail on him to especially see OB & tell him how sweet our powder is working. If I waited around all week I feel confident I could pick off an order: but I cant afford to do it and as Hagen & Ours can tell you, its "out of sight out of mind" and this acct or to put it another way the fellow on the ground gets the breaks

Jm m

NOTE: "E.I.DUPONT DE NEMOURS & CO., Inc. ARLINGTON, N.J. RECEIVED OCT 24 1939 PLASTIC SALES" is stamped on the back.

4184

Defendant's Exhibit (DP) No. 404

6387

DUPONT

10-20 193_

Dear Stu

Guess you have about given me up. Well, its just a case where I've been so goddam busy - and mostly trouble with my Detroit Trade - I've not had a chance to get up to see you. Will, however, on my next trip, probably next week.

Chevrolet & Pontiac at Orlando, are contemplating changing their color. Now using a lousy Autumnbeet: may change to K 46078

Buick is the color we are supplying for knobs, escutcheons etc., tho we'll have to adjust density for the wheel. The Chevrolet grip handle is ivory; with K46078 they may use a color submitted by Tenite. Again they may use the aforementioned Tenite color for the wheel & our 46078 for the grip handle. Of course we'd prefer the former.

Orland are making up sample wheels. They have 46078 on hand & tho too translucent. I understand they will submit any hour, painting the steel insert to minimize effect of translucency.

4185

6:388

DUPONT

193_

We will Ship them (Brilliant) Five note developments increasing density 25-50+ 75% So they can submit this 46078 with the correct density and still the correct Burgess color.

Will you see Little et al at Chas. and follow this matter and try to influence them toward our color. If they comment on translucency you can explain Inlands first submission was so they could formulate some idea on this color & that we are supplying the correct color & density & Inland no doubt will send them a "corrected" wheel.

It would be a splendid innovation if we could get our colors adopted instead of having to match Texite So see what you can do by pestering hell out of Little & Art & Color & let me know how you come out.

Jim having Newkirk send you a copy of my Inland report today So you may have a more complete story. Hastily Johnnie Mac.

Defendant's Exhibit (DP) No. 421

E. I. DU PONT DE NEMOURS AND COMPANY 6389

Sales of Pyralin

1916 Through 1932

Year	Total Sales to all Customers	Sales to Buick	Sales to Chevrolet	Total Sales to Buick and Chevrolet	Sales to Buick and Chevrolet as Percentage of Sales to All Customers
1916	$ 5,560,291	$ 60,681	$ 92,853	$ 153,534	2.8
1917	7,485,442	71,135	82,743	153,878	2.1
1918	7,982,955	14	29,685	29,699	0.4
1919	12,429,615	86,121	0	86,121	0.7
1920	15,586,618	129,457	121,051	250,508	1.6
1921	4, 850,192	67,950	80,316	148,266	3.1
1922	7,296,911	129,814	200,145	329,959	4.5
1923	9,993,571	170,563	251,431	421,994	4.2
1924	7,670,686	79,015	132,615	211,630	2.8
1925	11,961,288	31,489	184,029	215,518	1.8
1926	14,409,810	6,050	119,205	125,255	0.9
1927	12,403,193	1,062	102,048	103,110	0.8
1928	14,108,446	1,744	87,412	89,156	0.6
1929	13,898,368	2,019	42,019	44,038	0.3
1930	10,103,381	677	41,463	42,140	0.4
1931	8,490,952	832	17,152	17,984	0.2
1932	6,118,865	1,103	6,431	7,534	0.1

Prepared from Company records
Treasurer's Department
February, 1953

Defendant's Exhibit (DP) No. 422

6390

E. I. DU PONT DE NEMOURS AND COMPANY

Sales of Pyralin

1946 through 1950

Year	Total Sales	Sales to General Motors	Sales to General Motors as Percentage of Total
1946	$5,136,440	$8,121	0.16
1947	4,390,832	6,906	0.16
1948	4,003,351	9,147	0.23
1949	3,707,711	7,986	0.22
1950	5,144,199	9,126	0.18

Prepared from Company records
Treasurer's Department

4188

E

X-252

EXTRACT FROM MINUTES OF EXECUTIVE COMMITTEE MEETING #20— DECEMBER 20, 1915.

E.I.DUPONT DE NEMOURS & COMPANY

* * * * * * * * *

THE ARLINGTON COMPANY.

Report was received from Mr. Lammot duPont, President of The Arlington Company, dated December 13, 1915, (#5976) giving details in regard to the organization of that Company. The Committee was advised that hereafter a monthly report will be rendered on The Arlington Company's operations. Upon motion, this report was accepted and ordered filed.

Mr. Lammot duPont orally advised the Committee that since the above report was written, Mr. Victor Thomas, who was elected to the Board temporarily, has resigned and Mr. W. S. Carpenter, Jr. has been elected in his place.

6:3:92

Wilmington, Del., December 13, 1915.

EXECUTIVE COMMITTEE.

THE ARLINGTON COMPANY:

In accordance with instructions of the President approved by the Executive Committee, the writer has taken executive charge of The Arlington Co.

The resignations of the former Directors and officers have been accepted, as follows:

Messrs. H. S. Chapman, President.
C. B. Chapman, Vice-President.
J. S. Ellsworth, Treasurer.
E. R. Brown, Secretary.
I. J. Chapman.
J. E. Ellsworth.
R. E. Ensign.
Jos. Ensign.
Emmet Schulz.

The following Directors have been elected:

Messrs. F. A. Gudger (Formerly on Board).
J. E. Crane " " "
J. A. Burckel " " "
Wm. Coyne
Victor Thomas
Frederick Kniffen
L. du Pont

Mr. Thomas was elected temporarily. It is expected that he will resign and be replaced by Mr. W. S. Carpenter, Jr. as soon as the latter has recovered from his illness.

The following officers have been elected:

President	L. du Pont
Vice-President	F. A. Gudger
Treasurer	J. B. Broad
Secretary	A. Johnson

The organization of Departments of the company for proper conduct of the business has been planned and personnel arranged.

In view of the present outlook for business and the fact that the Company is over one month behind on orders, consideration is being given to the question of increased output and important action in accordance with the investigation is expected.

In view of the small profits in certain lines and the prospects for business, a revision of prices upwards has been made and will be put into effect about Jan. 1, 1916.

This report is for the information of the Executive Committee and hereafter a monthly report will be rendered of The Arlington Company's operations.

LAMMOT DUPONT
President.

LduP/MD

NOTE: "RETURN TO EXECUTIVE COMMITTEE ROOM 9069" is stamped at the bottom of the cover page and page 1 of the Report. "EXECUTIVE COMMITTEE SECY'S NO. 5976" is stamped at the top of page 1.

Defendant's Exhibit (DP) No. 424

63894

X-252-H

THE ARLINGTON COMPANY MONTHLY REPORT TO EXECUTIVE COMMITTEE OF E. I. DU PONT DE NEMOURS & CO.

Month of January, 1916.

4192

6295

Wilmington, Del., March 3, 1916.

EXECUTIVE COMMITTEE.

THE ARLINGTON CO. - JANUARY, 1916:

* * * * * *

Operations, Arlington: The plant operated continuously during January, the greatest effort being made to turn out as much material as possible. An appropriation of $270,000 has been approved for plant increase, although it is expected that not nearly this amount will be necessary. The normal capacity is considered 75 heats of 165 pounds each per day, in one shift of 10 hours. Arrangements were made as rapidly as possible to go on to two shifts, and by the end of January a production of 100 heats per day had been attained. The supply of paper for nitration was limited by the output of the White Springs Paper Co. Steps have been started to increase the supply by purchase.

* * * * * *

Sales: As of January 31, 1916, sales were about two months ahead of manufacture. Customers in general are complaining about slow delivery and one French concern has indicated their intention to bring suit against us for non-delivery. These conditions are in spite of the increased prices already reported to the Committee and are most favorable indications for future business. It is fully expected that this condition will improve: first, because the rush season is now over; second, because the present increased capacity and the expectation of shortly increasing to a production of 150 heats per day will relieve conditions.

* * * * * *

LAMMOT DU PONT,
President.

LduP/MD

Note: "RETURN TO EXECUTIVE COMMITTEE ROOM 9069" is stamped across the bottom of the cover page and page 1 of the Report. "EXECUTIVE COMMITTEE SECY'S NO. 6293" and "PASSED BY EXECUTIVE COMMITTEE MAR 14 1916 Mtg. # 40 E. I. duP. de N. & Co." is stamped on the cover page, and "Mtg. # 40 E. I. duP. de N. & Co." is handwritten.

Defendant's Exhibit (DP) No. 425

"EXCERPT"

THE ARLINGTON COMPANY

I DuP.

X-252-H

Passed by
EXECUTIVE COMMITTEE
APR 11 1916
Mtg. #50
E. I. duP. deN. & Co.

EXECUTIVE
SECY'S. NO. 6400
COMMITTEE.

THE ARLINGTON COMPANY

MONTHLY REPORT TO EXECUTIVE COMMITTEE

OF

E. I. DU PONT DE NEMOURS & COMPANY

Month of February, 1916.

RETURN TO EXECUTIVE COMMITTEE ROOM 9069

6297

Wilmington, Del., April 6, 1916.

EXECUTIVE COMMITTEE.

THE ARLINGTON CO.—FEBRUARY, 1916:

* * * * * *

Sales Department.

In the January report it was stated that unfilled orders were on hand for about two months' output. Owing to the absence of an Order Bureau and any tabulation of orders it is at present impossible to ascertain accurately just how many days' capacity of unfilled orders are on hand. It now appears that the previous estimate was certainly erroneous, the present estimate being that we have three months' orders ahead as of February 29th. The Sales Department has stopped taking orders for definite delivery or price until such time as we can see more clearly the actual cost and capacity available.

Revision of Prices:

A general revision of prices has been made, but the result of these increases will not be shown to any appreciable extent before March, and the full effect will not be seen until July. In revising these prices an effort was made to base them more logically upon costs than heretofore. In general, competitors have followed our price increase, but in certain particular items this has not been the case and we anticipate losing considerable propor-

4195

Revision of Prices: (Cont'd)

tion of certain items of business. As we can sell all of our Pyralin production in other lines this is not now serious.

Transparent sheeting for automobile trade is now being sold at 77¢ per pound, where last year the price was 60¢ per pound. There seems to be no lack of demand for this grade.

* * * * * *

(Stamp) LAMMOT DUPONT.
President.

LduP/MD.

Defendant's Exhibit (DP) No. 426 (illegible)

"EXCERPT"

Form 10924 300 8 16

THE ARLINGTON COMPANY

I DuP.

Passed by
EXECUTIVE COMMITTEE
SEP 1 1916
Mtg. #86
E. I. duP. deN. & Co.

EXECUTIVE
SECY'S. No. 7076
COMMITTEE

THE ARLINGTON COMPANY

MONTHLY REPORT TO EXECUTIVE COMMITTEE

OF

E. I. DU PONT DE NEMOURS & COMPANY

Month of June 1916

RETURN TO EXECUTIVE COMMITTEE ROOM 9069

THE ARLINGTON COMPANY

4197

6400

Wilmington, Del., August 31, 1916.

EXECUTIVE COMMITTEE.

THE ARLINGTON CO.—JUNE, 1916:

* * * * * *

Sales Forecast:

I quote you as follows verbatim from report of Sales Manager J. A. Burckel, being a matter of interest not only on account of the showing of actual conditions but as an indication of how carefully this subject is being followed

"So far as concerns sales for the balance of the year 1916, the amount in each class of materials is limited by factory production capacity, with the single exception of collars and cuffs.

Looking ahead to 1917, the indications are favorable for a continuation of a demand which will continue to tax our full capacity.

Thin Sheeting (Automobile Stock)

Our relations with the trade in this line are on a highly satisfactory basis, the Willys-Overland Company being the only large user with whom we have not established a satisfactory connection. I feel that we have every prospect of selling the quantity of 2,250,000 pounds in 1917 as estimated in my previous forecast.

Thin Sheeting (Advertising and Novelty Trade)

We have no connections at present with the one largest user of this line, Whitehead & Hoag Company of Newark. We have made no effort within the past year to establish such a connection and I consider it advisable

4193

Sales Forecast: (Continued

to defer such an effort until we are in a position to offer proper service. We are on good terms with other manufacturers in this line, to whom our sales are large and growing larger.

Thin Sheeting (Wood Covering)

The use of sheeting for covering of bath room fixtures, etc. is growing very rapidly. We have the bulk of this business.

Heavy Sheeting (Shell)

This trade has apparently suffered more than any other single line through our inability to deliver stock as required. The business is highly competitive between Celluloid Company, Fiberloid Company; Viscaloid Company and ourselves. I feel that we have until recently held our standing with customers in this line as well as any of our competitors, but within the past few weeks there is evidence that both the Celluloid Company and Fiberloid Company are making better deliveries than we are. The Celluloid Company are also, at last reports, selling shell stock 5¢ per pound under our price (65¢ against 70¢).

Heavy Sheeting (Ivory)

Since the approval of selling policy on heavy ivory at last Directors' meeting, we have approached several of the largest users and the indications are that we will be able to contract by August or September for approximately 500,000 pounds, at 85¢ per pound. The Celluloid Company now hold probably 80% of this trade which, for 1916, I estimate at a total of 1,000,000 pounds.

Sales Forecast: (Continued

Manufactured Line (Brushes, Combs, Mirrors, Sets, etc.)

Our further sales for 1916 will be greatly restricted by shortage of materials. All other competitors are apparently in similar predicament.

Forecasting the situation for 1917, and particularly prices for 1917, the results will be dependent to a large extent upon the outcome of our efforts to book ivory sheeting contracts at 85¢. If we succeed in doing this it will be an indication that our competitors are doing the same and will, of course, allow us to figure the selling prices of the same manufacturers of competitive goods as being based upon 85¢ ivory. Our own selling prices will carry a similar increase.

Collars and Cuffs.

This is the only line of our manufacture which shows a downward trend, in spite of the fact that no advance has been made in prices. Our advertising will doubtless bring an increased business, and my previous estimate for 1917 sales was $175,000, which I consider conservative.

Export Business.

Beginning July 1st, we are making 40,000 pounds per month minimum in sheet stock to apply upon old orders for export. I estimate that we will ship in 1916 approximately 500,000 pounds and that we will have a similar amount left on order for shipment in 1917."

(Stamp) LAMMOT DUPONT.

LduP/MD

Defendant's Exhibit (DP) No. 427

6.1103

"EXCERPT"

Form 10924 800 8 16

THE ARLINGTON COMPANY

X-252-H

I.duP.

7635

Passed by
EXECUTIVE COMMITTEE
E. I. duP. deN. & Co.
DEC 26 1916
Mtg. # 106

THE ARLINGTON COMPANY

MONTHLY REPORT TO EXECUTIVE COMMITTEE

OF

E. I. DU PONT DE NEMOURS & COMPANY

Month of October, 1916.

RETURN TO EXECUTIVE COMMITTEE ROOM 9069

THE ARLINGTON COMPANY

4291

6404

Wilmington, Del. December 13, 1916.

EXECUTIVE COMMITTEE:

THE ARLINGTON COMPANY—OCTOBER, 1916.

* * * * * *

Sales Department.

Comparative Sales:

The following figures are presented for September:

THE ARLINGTON CO.—SALES IN DOLLARS.

	Sept. 1916	Sept 1915	To Date 1916	To Date 1915
Thin Sheets	106859.44	101693.42	1205914.41	730151.47
Heavy Sheets	81433.08	68476.24	744929.43	408299.86
Solutions	18764.28	12808.87	208276.47	143456.29
Specialties	93632.49	82287.74	586355.33	394871.60
Combs	39837.64	32899.96	320431.72	210923.49
Brushes	41888.89	41684.95	255182.93	173340.08
Mirrors	46225.41	27261.04	227150.27	136129.30
Collar & Cuff Blanks	10089.82	13604.46	129418.99	131134.16
Sets	33619.50	25071.66	158257.01	98563.84
Miscellaneous	474.63	6596.15	13410.91	26939.99
TOTAL	472825.18	412384.49	3849327.47	2453810.08

Attention is called to the unusually heavy deliveries of Specialties, Mirrors and Sets, due to the demand of the usual heavy fall trade.

Arlington Company of Canada:

The following figures show the sales of The Arlington Company of Canada for September and the previous month:

4292

	This Month	Last Month
Collars & Cuffs	$ 6545.23	$ 4352.46
Combs	4138.19	3032.12
Rattles	1011.13	1112.51
Rings & Loops	124.62	910.59
Specialties	554.58	810.11
Miscellaneous	12.92	420.21
TOTAL	$12386.67	$10638.00

Selling Expense:

The following shows the total Selling Expense of The Arlington Company as the percentage of gross sales:

Sept. 1916	August 1916	To Date 1916	Year 1915
3.6%	3.9%	4.5%	9.9%

Average Selling Price:

Sept. 1916	August 1916	To Date 1916	Year 1915
50.1¢ (lb.)	70.1¢ (lb.)	65.6¢ (lb.)	62.8¢ (lb.)

The price for September is abnormally low, due to the adjustment on account of rough rolled scrap mentioned before.

The newly organized Order Bureau has been compiling a statement of the unfilled orders for Pyralin. At the end of the month the entire figures had not been completed, but the indications are that unfilled orders amount to approximately 2,000,000 pounds, or about four months' production. A small portion of this is for 1917 delivery. Probably 5000 pounds of the amount is already on hand in process

of seasoning. It will be noted that this covers only the unfilled orders for Pyralin and does not include unfilled orders for articles.

At a meeting of the Board of Directors in September a revision of prices was adopted and this was put into effect as of November 1st upon all business not then under contract. This revision has not caused any apparent disturbance in the trade.

(Stamp) LAMMOT DUPONT.

LduP/MD

Defendant's Exhibit (DP) No. 428

6107

"EXCERPT"

X-252-H

EXTRACT FROM MINUTES OF EXECUTIVE COMMITTEE MEETING #145—JULY 2, 1917

E. I. DU PONT DE NEMOURS & COMPANY

* * * * * *

THE ARLINGTON COMPANY REPORTS:

The following reports which were laid on the table at our last regular meeting, were again presented for consideration, and after discussion same were accepted and ordered filed:—

(#8588)—Balance Sheet of The Arlington Co. as of Apr. 30, 1917

(#8677)—Balance Sheet of The Arlington Co. of Can. Apr. 30, 1917

(#8722)—Arlington Co. Regular Monthly report for Apr. 1917.

420 E

6408

THE ARLINGTON COMPANY

MONTHLY REPORT TO EXECUTIVE COMMITTEE

OF

E. I. DU PONT DE NEMOURS & COMPANY

MONTH OF.....APRIL.....1917.

THE ARLINGTON COMPANY

4296

June 18, 1917.

EXECUTIVE COMMITTEE:

THE ARLINGTON COMPANY—APRIL 1917

* * * * * *

Trade Conditions: Trade conditions remain about the same with continued demands for our material beyond our ability to supply. The

automobile trade is indicating well in advance its requirements for the balance of the year, which, while they are heavy, show some decrease from what present demands have been running; the general report being that this is caused by a failure of the automobile industry to secure their full requirements of steel for the construction of cars, hence a decrease in their output.

* * * * * *

(Signed) F. A. Gudger
Vice-President.

Approved:

LAMMOT DUPONT.
President.

Defendant's Exhibit (DP) No. 429 6110

Wilmington, Delaware,
January 22, 1918.

MESSRS.	GUDGER	BROAD
	COYNE	WOOD
	MATHESIUS	GWYN
	RICHARDSON	ARMSTRONG
	WIGGINS	HOLT
	CRANE	LORD
	BURCKEL	

OPERATING-SALES COMMITTEE:

SEPARATE PLANT FOR TRANSPARENT.

Mr. Richardson will bring this subject before the Committee at the next meeting. It appears to me of such importance as to warrant very careful consideration. As Mr. Broad, Mr. Richardson and the writer had a lengthy discussion on the subject, I thought it desirable to put before the Committee my views, although they differ, to some extent, from those held by Messrs. Broad and Richardson.

The question whether we build an additional plant for transparent, or any other quality, depends primarily on the expectation of an increased demand a year or more hence, or after the war. We are now disposing of the entire output of the present plant. If there is any increased demand we must build additional capacity, and it appears to me obvious that this additional capacity should be in the form

of a separate plant, and probably a separate plant for transparent. If there is not to be an increased demand after the war, it appears to me perfectly obvious that we should not build any additional capacity unless from the point of view of economy in cost of manufacture. Surplus capacity will not aid in any way in avoiding com-

petition. It will, in fact, be a detriment. Reduced investment per thousand pounds' capacity will be no advantage in avoiding competition so long as some of the capacity is idle.

The question whether there is going to be any increased demand after the war is one which I feel the Operating Department should not attempt to pass upon, but should accept the judgment of the Sales Department without question.

Anticipating that the Sales Department's opinion will be that as far as The Arlington Works is concerned there will not be an increased demand for Pyralin goods after the war, we must confine ourselves to the question of whether a new plant will operate with sufficient economy to warrant its construction under present excessive building costs. Mr. Richardson has prepared a statement intended to show the economy of a new plant, but has apparently laid greatest stress upon those items of economy which it should be possible to accomplish at the present plant at Arlington, if that plant were properly handled with respect to operations and accounting. It does not appear to me that economies of this nature are suitable to apply as reasons for the construction of a new plant.

In view of the present cost of construction, probably 100% above normal cost, there appears to me little probability that careful analysis of operating savings possible by building a new plant would justify such construction, when perhaps one or two years' delay would save the excess cost.

As stated before, the question depends on the

Sales Department's estimate of demand for Pyralin after the war. In the summer of 1916 Mr. Burckel made a forecast of the demand for Pyralin for several years ahead. This forecast did not show any demand in excess of our present capacity for several years to come. I do not know of any reason justifying Mr. Burckel making a radical change in his forecast of 1916.

It is desirable that the Sales Department be prepared to state their views on this question.

LAMMOT DUPONT

LduP/MD

6413

"EXCERPT"

PYRALIN DEPARTMENT REPORT FOR
OCTOBER 1923

* * * * * *

Important Sales Features

An order for 20,000 pounds of hair-pin beading was received from Tilton & Cook Company of Leominster, Mass.

Agreements were reached with the Nash Motors Company and the Studebaker Corporation under which they will place their business with us for the first six months of 1924.

1

4211

Defendant's Exhibit (DP) No. 431

"EXCERPT"

6114

DO-2

EXTRACT FROM MINUTES OF MEETING # 6
BOARD OF DIRECTORS, DU PONT VISCOLOID COMPANY,

HELD ON August 18, 1925.

PRESIDENT'S REPORT:

Regular report was presented from the President for the month of June, 1925, and after being discussed in detail, it was moved and unanimously carried that same be received and ordered filed.

4212

6115

August 15, 1925.

TO: BOARD OF DIRECTORS
DU PONT VISCOLOID COMPANY

Submitted herewith is report of operations for June 1925, covering Arlington, Leominster and Poughkeepsie Plants.

At the present writing it appears that general business conditions in our industry are showing considerable improvement.

F. B. DAVIS, JR.
PRESIDENT

FBD:H

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4213

Pyralin Sheeting Sales Comments 6416

* * * *

Important Sales Features:

We have been making a campaign among the manufacturers of leather belting. We feel there is a market for our material with this class of trade and are trying to get in on the ground floor, but have been doing it quietly so that our competitors would not know of our activity.

The Rhodes Belting Co. of Wilmington have been using quite a lot of our material for some months past as a binder between plies of leather. They are very secretive about their process, but from all we can learn, a Pyralin Sheeting dipped in a solvent and cemented between the two pieces of belting makes the most secure binder obtainable. The Jewel Belting Co. in Connecticut are also using our material. Our campaign about New York up to date has not been especially successful, but we have succeeded in interesting Grafton & Knight of Worcester, who are one of the largest firms in the business. Two of their representatives were at our plant three weeks ago and we are sending them a few hundred sheets to experiment with. They seem enthusiastic as to the prospects, and if we succeed in lining up Grafton & Knight, we will have one of the outstanding firms in this industry using our material.

Contract from the Nash Motor Car Co. was received, covering their requirements over the balance of the year.

The Bay State Optical Co., one of our good accounts who has been indicating an interest in the Fiberloid Demi-Blonde Shell, recently sent us an order for 8000 pounds. For the time being at least, they are apparently not ready to take up the Fiberloid stock.

4214

Defendant's Exhibit (DP) No. 432

"EXCERPT"

DV-2

EXTRACT FROM MINUTES OF MEETING # 13
BOARD OF DIRECTORS,
DU PONT VISCOLOID COMPANY,
HELD ON FEBRUARY 23, 1926

PRESIDENT'S REPORTS:

Regular reports from the President for the months of December, 1925, and January, 1926, were presented, and after being discussed in detail it was moved and unanimously carried that same be received and ordered filed.

1

6118

January 26, 1926.

TO: BOARD OF DIRECTORS
DU PONT VISCOLOID COMPANY

MONTHLY REPORT—DECEMBER 1925

Submitted herewith is report of operations for the month of December 1925, covering Arlington, Leominster and Poughkeepsie.

Respectfully submitted,

F. B. DAVIS, JR.
PRESIDENT

* * * * * *

4216

Pyralin Sheeting Sales Comments

* * * *

Important Sales Features:

Contracts were closed with the Nash Motor Car Co., Reo Motor Car Co., and White Motor Car Co., for a six months' period at 50 and 5% discount from list.

Eclipse Pen Company gave us an experimental order for 50,000 fountain pen parts to be made from the tubing developed by the Research Department by the die press method. No additional orders are being taken on this development until we ascertain the results obtained in producing the Eclipse order.

Defendant's Exhibit (DP) No. 433

"EXCERPT"

DU PONT VISCOLOID COMPANY

NOVEMBER 1926

4218

Automobile Trade. Billings $167,000 compared with $234,000 in October and $220,000 in November 1925. This shows very substantial decrease from both the previous month and the same month last year. There was about an equal decrease between the jobbing and automobile manufacturing trade. Our jobbing demand is now tapering off due to seasonal causes and will be considerably less during the next few months. Based on past experience there should be a pick up in the manufacturing trade during January and February, but we are not sure this will take place due to the constant decrease in consumption in the industry. During the month of November we closed contracts with Buick, Nash, Reo, Olds and the White Motor Company for the first six months of 1927.

Leominster had a quiet month in November on utomobile sheeting with no prospects of an improvement in December.

Defendant's Exhibit (DP) No. 434

6122

"EXCERPT"

PYRALIN DEPARTMENT REPORT

SEPTEMBER 1924

4220

6123

October 20, 1924.

TO: EXECUTIVE COMMITTEE

FROM: PYRALIN DEPARTMENT.

MONTHLY REPORT – PYRALIN DEPARTMENT – SEPTEMBER 1924

We are enclosing report covering operations for this department during the month of September. The volume of sales during the month somewhat exceed our forecast, with a considerable increase in profit. The bookings for future orders are falling off somewhat although immediate sales are continuing to run as forecasted. We still feel confident of meeting the profit forecasted for the balance of the year.

F. B. DAVIS, JR.
GENERAL MANAGER.

FBD:M

* * * * * *

2

Important Sales Features

An order of from 40,000 to 50,000 pounds of Sheeting was received from Grigsby-Grunow-Hinds Company of Chicago for use in manufacture of radio horns.

Two additional repeat orders on radio dials have been received from Garod Corporation and their enthusiasm over this article after having used 3000 is increasing.

Our Demi-Blonde Shell, #938, the same color that is used in our Pyralin Line of toiletware, is increasing in popularity with the optical trade and a nice volume of business has been booked. This, without doubt, is the most beautiful Demi-Blonde shell on the market and up to this time competitors have been unable to match it.

The Standard Tank & Seat Company have just obtained a patent on a new baby rattle which promises to be very popular and we obtained an opening order of 10,000 sheets for manufacture into this article.

We succeeded during the past month in obtaining a substantial order from Maxwell Motor Car Company covering Maxwell and Chrysler requirements. This is an entirely new account for us and we took the business away from Nixon.

A special deal was worked up with the Standard Pyroxyloid Company of Leominster, Mass. through which we sold 24,000 lbs. of ivory sheeting, all of which is on our excess list. This will result in a good inventory reduction on this particular color.

Our exhibition at the New York Radio Show was, from our standpoint, very successful. Thousands of visitors were there and familiarized themselves with Pyradiolin panels, dials and horns. From this exhibit we obtained 55 active prospects for business and about 200 casual inquiries to be followed up. In addition to our own exhibit, the

Grigsby-Grunow-Hinds Company displayed Pyralin horns in connection with their loud speakers; the American Electric Company of Chicago displayed a part Pyralin horn in connection with their loud speaker; the Poster Company of New York displayed Pyralin panels in connection with other panels they manufacture; the Garod Corporation displayed dials made of Pyralin on their radio sets.

We have decided to take space at the Chicago Radio Exhibit to be held from November 18th to 23d.

An order has just been received from the Music Master of Philadelphia for 10,000 tone-arms. This concern is well pleased with the results obtained from the various samples we have submitted and this order is tangible evidence that they are pleased with these tone-arms, which sell at $1.25 each.

* * * * * *

NOTE: "RETURN TO EXECUTIVE COMMITTEE ROOM 9069" is stamped on the cover page, the page containing the covering memorandum and page 1 of the Report. "AUTHORIZED BY EXECUTIVE COMMITTEE E. I. DU PONT DE NEMOURS & CO. OCT 22 1924 *Mtg. 646*"; "EXECUTIVE COMMITTEE SECY'S NO. 1191" and "RECEIVED OCT 20 1924 LAMMOT DUPONT" are stamped on the page containing the covering memorandum. *"LduP"*, *"R"* and *"P 9, 15"* are handwritten on the upper lefthand corner of the page containing the covering memorandum. Italics indicate handwriting.

Defendant's Exhibit (DP) No. 435

"EXCERPT"

6426

DV-2

EXTRACTS FROM MINUTES OF MEETING #11
BOARD OF DIRECTORS,
DU PONT VISCOLOID COMPANY,
HELD ON December 22, 1925

PRESIDENT'S REPORT:

Regular report from the President for the month of November, 1925, was presented, and after being discussed in detail it was moved and unanimously carried that same be received and ordered filed.

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4224

6127

Pyralin Sheeting Sales Comments

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Important Sales Features:

It is interesting to note that since advancing our price to the Ford Motor Car Company three months ago, we have booked approximately $200,000 of orders at 10% advance in price.

4225

Defendant's Exhibit (DP) No. 436

October 3, 1927

Mr. James Lynah,
Executive Secretary,
General Motors Purchasing Committee,
Detroit, Michigan.

Dear Mr. Lynah:—

On September 12th we quoted you a special transfer price on your alcohol requirements for the next four months. Inasmuch as the published market price for CD-5 alcohol in drums, carload, is now 43¢ per ga[illegible] o.b. distillery, please consider the price which we gav[illegible] to be particularly attractive.

We will be interested to learn whether you have as yet made purchase of your alcohol and what are the prospects of our getting this business.

I might add that we are still in a position to supply you with the old formula CD-5 alcohol and when making your purchase we consider it very important that you specify the old formula alcohol because the new CD-5 formula contains aldehol and has an extremely objectionable odor.

Your very truly,

[Stamp] ZACK PHELPS

DEVELOPMENT DEPARTMENT

ZP:M

NOTE: "FILE COPY" is printed across the middle of the page. Handwritten *"288-L-20"* appears in the upper right hand corner of the page.

E

Defendant's Exhibit (DP) No. 437

GENERAL MOTORS CORPORATION

DETROIT, MICHIGAN

October 6, 1927.

Mr. Z. Phelps,
E. I. duPont deNemours & Company,
Wilmington, Delaware.

Dear Mr. Phelps:

Replying to your letter of October 3rd, I advise that the Committee considered the proposals to supply Denatured Alcohol last week but decided that it was a speculative proposition and believed it preferable not to cover by contract.

It seems that generally they have bought through the winter at more favorable prices than contract proposal prices offered at the beginning of the season. Accordingly, we will not make a general contract for denatured alcohol.

Yours very truly,

GENERAL PURCHASING COMMITTEE.

James Lynah
Executive Secretary.

James Lynah:EB.

NOTE: Handwritten *"288-L-20"* appears in the upper right hand corner of the page. "NOTED Z.P." is stamped in the upper right hand corner of the page.

E

Defendant's Exhibit (DP) No. 438

6430

Excerpt from letter of H. Fletcher Brown to Mr. F. K. Kielberg, Managing Director, United Molasses Company, Ltd., 101 New York City, N. Y., dated July 24, 1929.

"At the outset, it might be well to observe that when the Eastern Alcohol Corporation was originally formed and the stock thereof was issued and paid for equally by the National Distillers interests and the duPont Company, the spirit of a mutual partnership prevailed and has characterized our relationship ever since.

"Although the Eastern Alcohol Corporation is a separate corporate entity, we have always proceeded upon the theory that the duPont Company and the National Distillers Products Corporation were in fact operating Eastern Alcohol Corporation's plant, and were each of them owners of an undivided one-half interest in the plant and property of Eastern Alcohol Corporation, as well as in the alcohol which that plant produced.

"The plant as originally constructed had a capacity of approximately eight million gallons of marketable alcohol per year. However, subsequent additions arising out of the installation of alcohol-glycerin equipment, as well as other additions and improvements have increased that capacity to a gallonage in excess of twelve million gallons per annum, and for the purpose of this letter it may be assumed that the plant of Eastern Alcohol Corporation today has a total productive capacity in excess of the last mentioned figure, subject however to reasonable variations which could be expected to arise in the course of normal operations."

4228

Defendant's Exhibit (DP) No. 439 63731

Excerpt from Minutes of Meeting of Interdivisional Relations Committee, General Purchasing Committee, General Motors Corporation, held September 30, 1927.

"GENERAL MOTORS CORPORATION

Minutes of Meetings of Interdivisional Relations Committees
Standing Sub-Committee
General Purchasing Committee
(State above, name of Committee)

42nd Meeting Held at Detroit, Michigan
On Friday, September 30, 1927.
At 10:00 A. M.

Present: Messrs: G.G.Allen Messrs: C.O.Miller
D.F.Hulgrave D.P.O'Keefe
James Lynah

* * * * *

"(d.) Denatured Alcohol.
The question of making a contract for denatured alcohol, formula #5 for Anti-Freeze purposes was again considered. Proposals from duPont Company, Michigan Alkali, and U.S.Industrial Alcohol Co. were considered, and while the proposed prices are at the present time considerably below the market prices, it was agreed that this item is too speculative, experience in the past having shown that prices were frequently reduced during the winter months.

James Lynah

Executive Secretary."

Defendant's Exhibit (DP) No. 441 6432

E. I. DU PONT DE NEMOURS AND COMPANY

(National Ammonia Division of Predecessor, National Ammonia Company, Inc.)

Sales of Ammonia and Ammonia Products to

New Departure Manufacturing Company and Successors

1933 through 1938

Year	Sales
1933	$ 2,284
1934	766
1935	1,185
1936	1,828
1937	1,892
1938	1,743

Prepared from Company records
Treasurer's Department

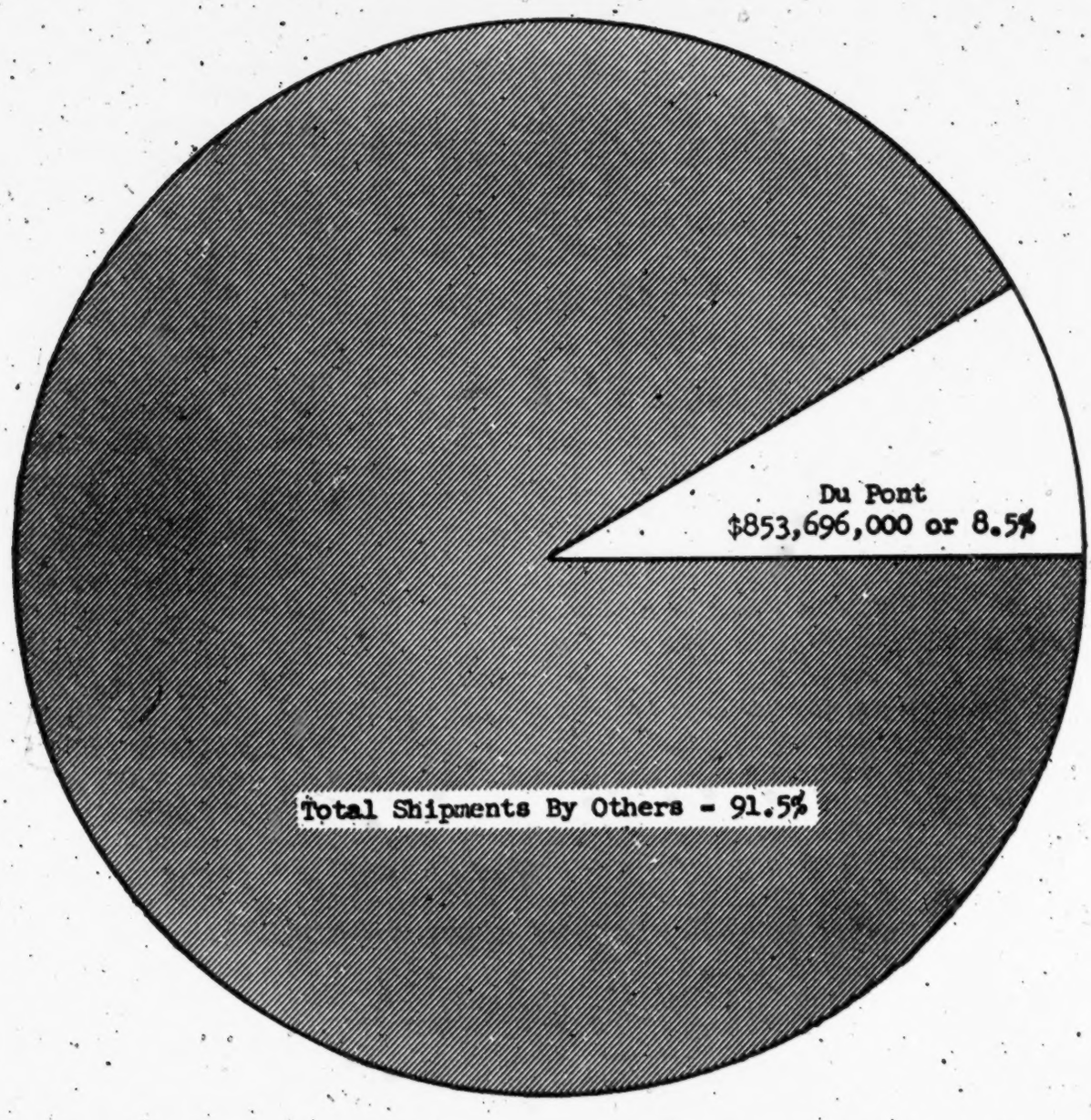
4230

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Defendant's Exhibit (DP) No. 442

6433

VALUE OF 1947 SHIPMENTS
DU PONT VS. TOTAL UNITED STATES INDUSTRIES
IN WHICH DU PONT PARTICIPATES



TOTAL SHIPMENTS - $9,999,728,000

Source: U. S. Bureau of the Census certified copy (dated March 13, 1950) of a tabulation, based on edited figures appearing on reports filed by Du Pont Company and other companies for the 1947 Census of Manufactures, showing the 1947 aggregate value of products shipped, classified by industry in which they are primary, for 93 Du Pont Company plants and for the United States.

Treasurer's Department
April, 1953

4231

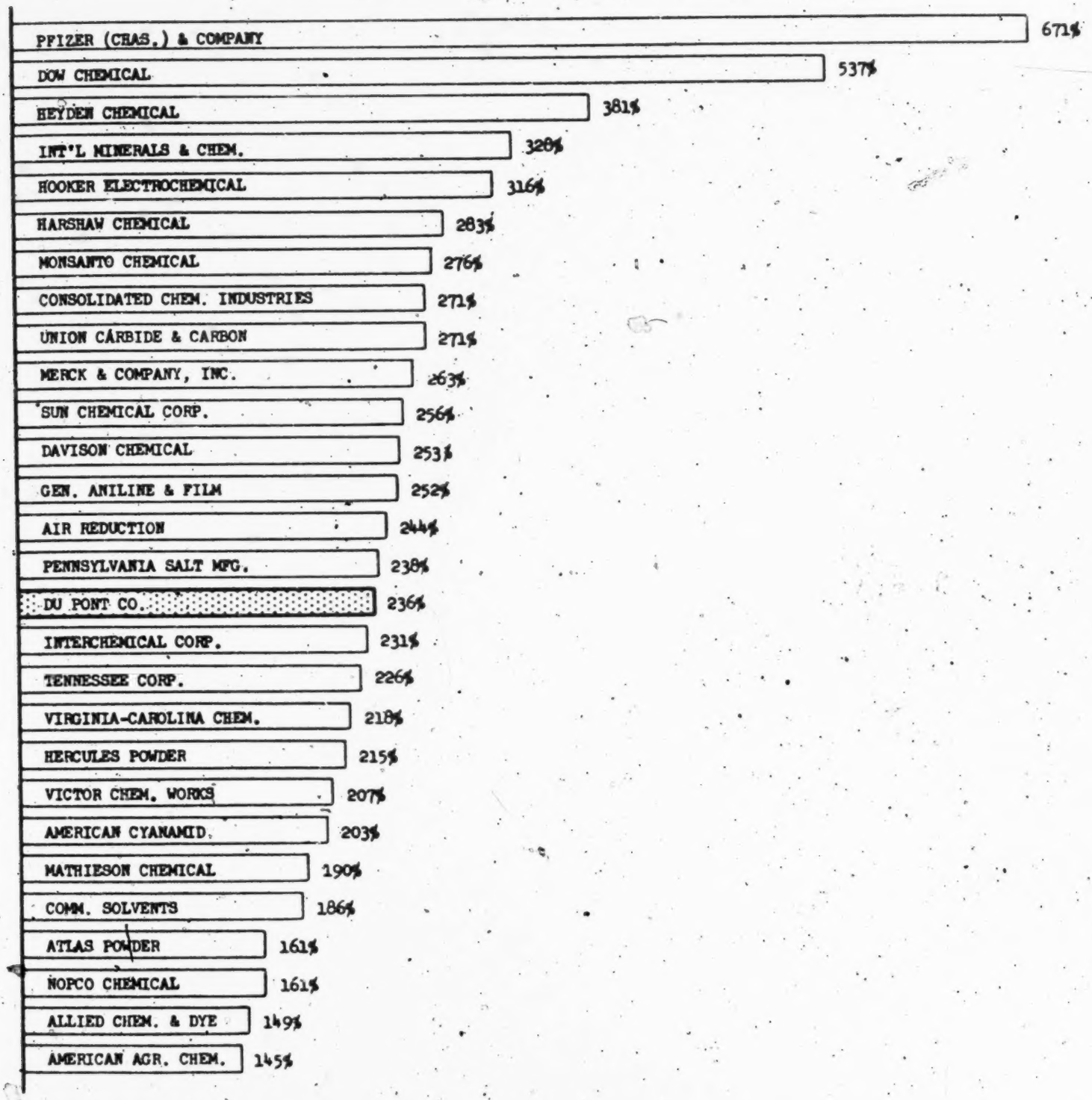
Defendant's Exhibit (DP) No. 443

6434

GROWTH IN NET SALES

DU PONT AND 27 CHEMICAL COMPANIES WITH SALES OVER $20,000,000* IN 1948

% Increase 1948 Over 1939



Source: Moody's Industrials.

* U. S. Industrial Chemical Co., Rohm and Haas and Westvaco Chlorine Products Corp., with sales over $20 million in 1948, have been omitted because sales data were not available in both years in Moody's Industrials.

Treasurer's Department
April, 1953

E

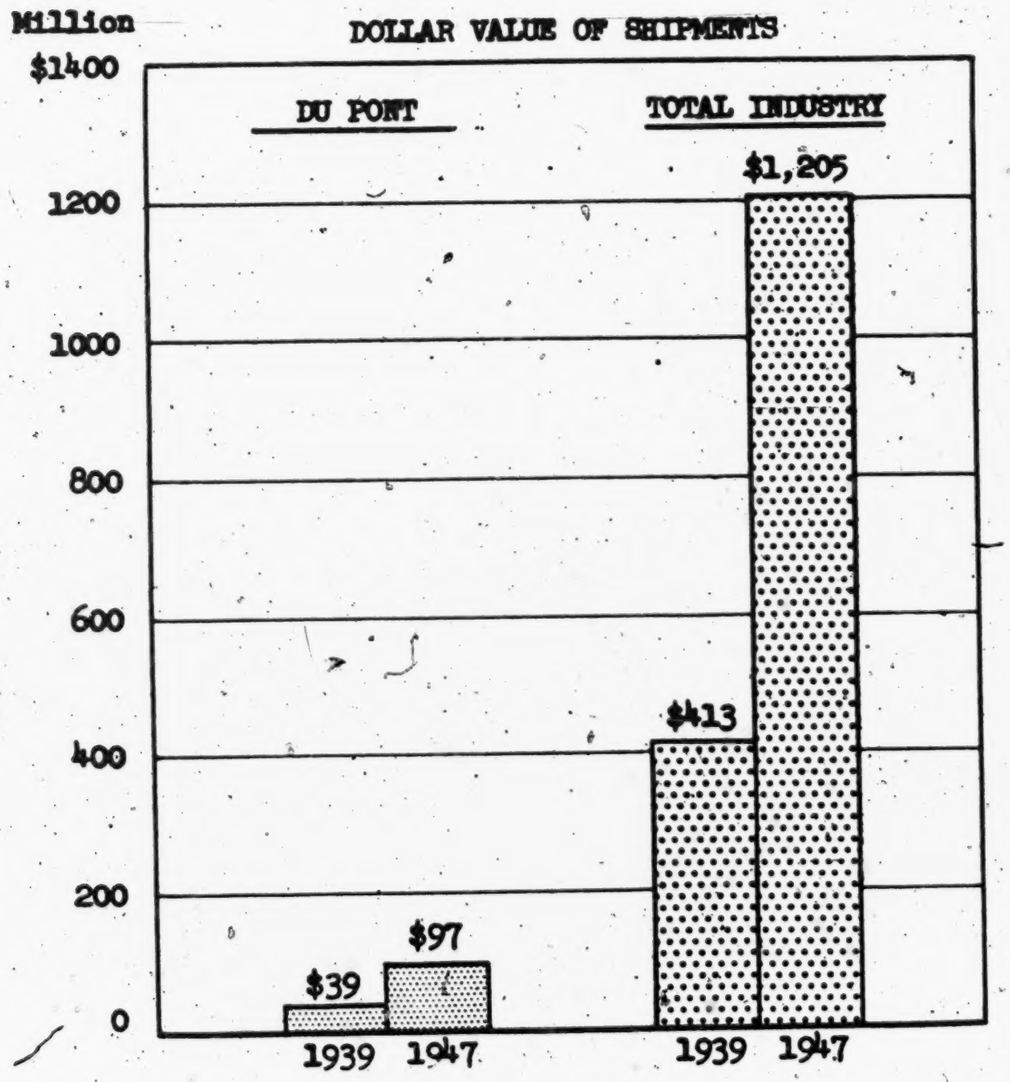
4232

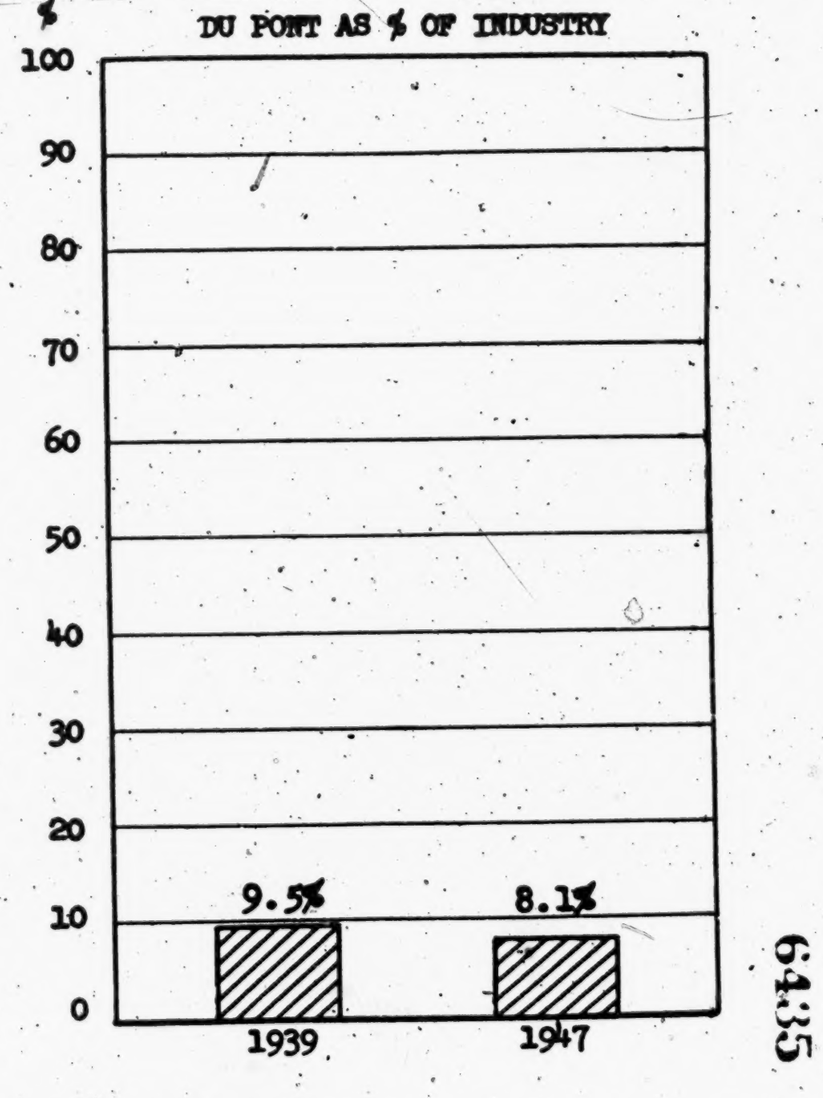
Defendant's Exhibit (DP) No. 444

PAINTS AND VARNISHES

DOLLAR VALUE OF SHIPMENTS - DU PONT VS. TOTAL INDUSTRY

1939 vs. 1947





Source: Du Pont - Data reported to U. S. Bureau of Census
Total Industry - U. S. Bureau of Census: 1947 Census of Manufactures Vol. II, Table 6, Page 416.

Treasurer's Department
May, 1953

4233

6435

Note:

Page 6436 is on card 138.

Defendant's Exhibit (DP) No. 447 6437

E. I. du Pont de Nemours and Company

SALES OF BRAKE FLUID

Years 1936-1950, Inclusive

Year	Total Gallons	Dollars
1936	209 791	196 520
1937	655 468	587 470
1938	671 304	587 623
1939	823 792	698 476
1940	896 974	791 352
1941	1 227 322	1 085 025
1942	1 090 121	1 003 116
1943	1 870 009	1 812 423
1944	1 838 499	1 772 124
1945	1 850 330	1 816 745
1946	1 480 648	1 490 879
1947	1 930 389	2 756 921
1948	2 410 880	3 392 309
1949	1 871 874	2 543 785
1950	2 388 846	3 136 232

Treasurer's Department
May, 1953

Defendant's Exhibit (DP) No. 448 6138

PETITION AND POWER OF ATTORNEY

To the Commissioner of Patents:

Your petitioners, DON KYLE PROFFITT and JOEL GEORGE SHARRON, citizens of the United States and residents of Denver, in the County of Denver and State of Colorado, whose post office addresses are 2839 West 29th Avenue, Denver, Colorado and 3325 West 37th Avenue, Denver Colorado, respectively, pray that Letters Patent may be granted to them for the improvement in PROCESS OF MANUFACTURING ALKYL COMPOUNDS as set forth in the annexed specification.

And they hereby appoint Riordon and Riordon, a firm composed of Charles E. Riordon, and C. Russell Riordon, with offices in the Washington Loan and Trust Building, Washington, D. C. their attorneys, with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to sign the drawings and to receive the patent and to transact all business in the Patent Office connected therewith.

.....

.....

SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

BE IT KNOWN that we DON KYLE PROFFITT and JOEL GEORGE SHARRON, citizens of the United States, and residents of Denver, in the County of Denver, and State of Colorado, have invented certain new and useful improvements in PROCESS OF MANUFACTURING ALKYL COMPOUNDS, of which the following is the specification:

4236

This invention relates to the manufacture of tetra alkyl lead, and related compounds, and particularly to the utilization of the Grignard process for this purpose.

The recent development in this art has necessitated the employment of better methods of producing the lead alkyls and related compounds. But prior art processes, even those of recent suggestion have failed to prove satisfactory due to the many difficulties involved in the manufacture of these compounds.

Among the objects and advantages of the present application will be found a process of manufacturing the lead alkyls and related compounds, particularly lead tetraethyl, which eliminate many of the difficulties experienced in prior art processes.

Other objects and advantages will appear from the more detailed description set forth below, it being understood in this connection that much detailed description is given by way of example, and not by way of limitation, since various changes may be made therein by those skilled in the art, without departing from the spirit and scope of this invention.

Fundamentally, this process forming the basis of the herein disclosed invention makes use of the Grignard process, in that a magnesium alkyl halide is reacted with a double salt of lead. Primarily this double salt of lead is a lead alkyl salt, particularly the sulphate although other lead alkyl salts of other divalent and polyvalent acids than sulphuric acid may be used. In the production of lead tetraethyl in accordance with this invention, the magnesium ethyl halide is reacted with the lead ethyl sulphate. But

as pointed out above, other alkyl compounds may be made in strictly analogous processes.

—2—

The conditions under which the reaction is carried out is of some importance, and should be chosen to yield the best results. For desirable results herein, it has been found that the desired ingredients should be reacted together in the presence of an additional lead salt in a suitable medium or solvent, and in the presence of a catalyst which may desirably be a catalyst such as is used in connection with the preparation of Grignard reagents, namely, an alkyl iodide, iodoform, iodine, etc. For making lead tetra ethyl, ethyl iodide is a desirable catalyst, while when using a double lead ethyl sulphate as one of the reacting ingredients, lead sulphate serves well as the additional lead salt. Other lead salts such as the chloride may be used, but in the recovery of the compounds in subsequent steps, the use of lead chloride may give rise to difficulties or added steps. The reacting ingredients may be used in varying proportions, but the best yields have been obtained by using them in substantially equi-molecular proportions. A suitable medium or solvent for carrying out the reaction may be ether, octane, or benzine fraction.

The following specific example illustrates the preferred method of carrying out the process. A mixture of 21 parts of lead sulphate and 46 parts of colloidal lead ethyl sulphate are suspended in ether. The desired catalyst such as ethyl iodide is added, and into the suspension, an ethereal solution of 83 parts magnesium ethyl bromide is allowed to flow. The mixture is preferably continuously agitated during the process. The temperature is maintained above 20°C. and desirably below about 36°C. for a period of about

two hours. The lower limit of temperature is desirable in order to obtain a sufficiently rapid velocity of reaction, while temperatures above 36°C. are principally avoided in order to avoid evaporation of the ether. If temperatures above 36°C. are however used, the reaction vessel should

be under pressure. After the stated period of reaction, the mixture is drawn off and filtered. The ether is then distilled from the solution, after which the lead tetra ethyl is distilled under vacuum. Substantial yields of the lead alkyl are obtained.

Most desirable results have been obtained by using the double lead salt in colloidal condition, but this is not absolutely essential.

The lead tetra ethyl or other metallic alkyl derivative produced in accordance with this process may be utilized in special fuels for internal combustion engines, or for other purposes.

Having thus set forth my invention, we claim:

1. In a process of making lead alkyl, the step of reacting a double lead alkyl salt with a Grignard reagent.

2. In a process of making lead alkyl, the step of reacting a colloidal double lead alkyl salt with a Grignard reagent.

3. In a process of making lead tetra ethyl, the step of reacting lead ethyl sulphate with magnesium ethyl bromide.

4. A process of making lead alkyl which comprises reacting together a double lead alkyl salt with a magnesium, alkyl halide, in the presence of a catalyst.

5. A process of making lead alkyl which comprises reacting

together a double lead alkyl salt with a magnesium alkyl halide in the presence of a Grignard catalyst and an additional lead salt.

6. A process of making lead tetraethyl which comprises reacting together a double lead ethyl salt with magnesium ethyl halide in the presence of a Grignard catalyst.

7. A process of making lead tetra ethyl which comprises reacting together lead ethyl sulphate with magnesium ethyl bromide in the presence of ethyl iodide and lead sulphate.

8. A process of making lead tetra ethyl which comprises reacting together lead sulphate, lead ethyl sulphate, and magnesium ethyl bromide, in the presence of a Grignard catalyst, at a temperature of from 20 to 36°C. while agitating the mixture.

—1—

In testimony whereof we hereunto affix our signatures.

.....

.....

OATH

CITY OF WASHINGTON }
DISTRICT OF COLUMBIA } ss:

DON KYLE PROFFITT and JOEL GEORGE SHARRON, the above named petitioners being duly sworn depose and say that they are citizens of the United States, and residents of Denver, Colorado; that they verily believe themselves to be the original, first and joint inventors of the improvements in

PROCESS OF MANUFACTURING ALKYL COMPOUNDS

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described and claimed in the annexed specification; that they do not know and do not believe that the same was ever known or used before their invention or discovery thereof, or patented or described in any printed publication in any country before their invention or discovery thereof, or more than two years prior to this application, or in public use or on sale in the United States for more than two years prior to this application; that said invention has not been patented in any country foreign to the United

States on an application filed by them or their legal representatives or assigns more than twelve months prior to this application; and that no application for patent has been filed by them or their representatives or assigns in any country foreign to the United States.

.....

.....

Subscribed and sworn to before me by the said DON KYLE PROFFITT at Washington, D. C., this 11th day of May, 1926.

.....

Notary Public

SEAL

STATE OF COLORADO } ss:
COUNTY OF DENVER }

Subscribed and sworn to before me by the said JOEL GEORGE SHARRON, at Denver, Colorado, this .... day of May, 1926.

.....

Notary Public

SEAL

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Defendant's Exhibit (DP) No. 449 6444

EXCERPT

February 16, 1932.

TO: EXECUTIVE COMMITTEE
E. I. DU PONT DE NEMOURS & COMPANY

FROM: PRESIDENT
DU PONT VISCOLOID COMPANY

COMPETITIVE REPORT - TWELVE MONTHS 1931

* * * * *

Extensive changes have taken place among manufacturers of safety glass. General Motors Corporation has abandoned their safety glass manufacturing plant, this business having been turned over to Libbey-Owens-Ford Glass Company along with the plate glass business of the National Plate Glass Company.

* * * * *

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Defendant's Exhibit (DP) No. 451

6415

E. I. DU PONT DE NEMOURS & COMPANY

SALES OF PRODUCTS NEW TO THE COMPANY SINCE 1928

(YEAR 1950)

	Sales	Percent of New Product Sales
Total sales of "new" products	$ 852,465,000	
Sales of "new" products to General Motors	13,057,000	1.5
Sales of "new" products to U. S. Rubber Company	15,607,000	1.8

- Notes -

New products are those that the du Pont Company added to its line after 1928, or on which large scale commercial production was attained after 1928.

Total sales of all products by du Pont in 1950 were $1,297,473,000.

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6213

Note:

Page 6446 is on card 138.

Letterhead of

GENERAL MOTORS CORPORATION
224 WEST 57TH STREET
NEW YORK, N. Y.

OFFICE OF THE PRESIDENT

Five years ago, on July 26, 1918, the Directors of General Motors Corporation approved a plan under which shares of stock, both Debenture and Common, are awarded to employes of the Corporation in the form of bonus for conspicuous and meritorious service. The object of the plan is to recognize and encourage good service and to bring into the partnership of General Motors those whose efforts make the Corporation successful.

The original bonus plan has been modified so that in the future stock awarded will be distributed one-quarter immediately and the balance in three annual installments. Also the matured installments of bonus heretofore awarded are to be distributed. In accordance with this modification certificates of stock are now being sent out to the bonus beneficiaries of 1922 and to those of other years as well.

Of the stockholders who are also employes of the Corporation, many have received all or part of their holdings through the bonus plan. These employes are warmly welcomed to the partnership of stockholders, as their conscientious work, faithful service and accomplishment have added many thousands of dollars to the good will value of the shares to which they are so justly entitled. The annual report of the Corporation, to be sent out shortly, should encourage all bonus stockholders to treasure these shares

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and to hold them as a permanent investment, of which they will be proud and satisfied.

Very truly yours,

Pierre S. du Pont,
President.

NOTE: In the upper left hand corner appears a penciled arrow and an illegible name. The date 2/16/23 is handwritten at the top of the document. In the first sentence of the first paragraph, "July 26, 1918 The" has been inserted.

4246

Defendant's Exhibit (DP) No. 454

6419

Wilmington, Del., August 28, 1923.

FINANCE COMMITTEE,
BUILDING.

Gentlemen:—

Referring to Mr. Raskob's report of July 26th—No. 9754—and my report on the same subject dated August 16th:

This is to recommend the former amended in the following particulars:—

a. Eliminate the purchase of additional shares of common stock of General Motors Corporation to bring our holdings to 7,800,000 shares.

b. The amount of interest in the General Motors Securities Co. sold to be the equivalent of 2,000,000 shares of General Motors common stock.

c. Terms of payment changed to one-half cash ($15,000,000); other half ($15,000,000) in 7% cumulative convertible preferred stock as described below:

The preferred stock will be a closed issue or part of an original closed issue of standing equal to that herein described and except for the notes referred to below the Managers Company will issue no securities ranking equal to or senior to this preferred stock. The stock will be callable at par plus accumulated dividends at any date and will be retired by the Managers Company as early as possible out of its available income as described on page 4 of report No. 9754.

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The stock will be convertible par for par in whole or in part at the owners' option on or before April 15, 1931, into 7% Gold Bonds of the Managers Securities Co. maturing April 15, 1931, and to be retired out of the available income as described on page 4 of report No.9754, and to be secured

by a first lien on all of the shares of General Motors Securities Company purchased hereunder. This collateral will be proportionately increased by any increase in the original issue of preferred stock over $15,000,000. To insure this convertible privilege the Managers Securities Co. will suitably lodge these securities to be used as collateral in escrow to be held subject to a first lien by these notes if and when issued.

d. Include as a default under the Note Indenture, failure to pay interest when due.

Respectfully submitted,

IRÉNÉE DU PONT, President
Irénée du Pont

NOTE: "FINANCE COMMITTEE SECY'S No. 9881" is stamped at top right and "RECEIVED AUG 28 1923 M. D. F.", with an "8" written above "M. D. F.", is stamped at top center of first page. "RETURN TO EXECUTIVE COMMITTEE ROOM 9069" is stamped at bottom of first page. Italics indicate handwriting.

Defendant's Exhibit (DP) No. 455

6451

GENERAL MOTORS CORPORATION
224 W. 57TH ST. NEW YORK

New York City, October 27th, 1923.

TO THE COMMON STOCKHOLDERS
OF GENERAL MOTORS CORPORATION:

The enclosed plan involving the formation of the Managers Securities Company is designed to interest the men occupying important managerial positions as partners with the stockholders in this corporation.

In a great structure such as the General Motors Corporation where our problems and our operations are so diversified, where capital must be employed and plants operated in the best interests of the corporation as a whole, as against any separate part or division, and where new capital supplied should be injected where it will accomplish the greatest good, it is important to find, develop and retain men to occupy important managerial positions who are capable of assuming great authority and the responsibilities that make these positions important. Not only is it necessary that these managers be capable of handling efficiently the immediate problems of their respective positions and divisions, but it is essential that they view broadly and understand the policies necessary to co-ordinate the various ramifications of this vast business and thus secure proper return to the stockholders on upwards of five hundred million dollars of capital employed.

There are approximately seventy managerial positions upon the occupants of which the corporation must rely for the successful management of its business. From practical experience and observation your directors believe that the men occupying these positions can secure a better, broader and more sympathetic understanding of the stockholders' interests, and, therefore, of the interests of the corporation as a whole, if they can be attracted into partnership with the stockholders through becoming substantial stockholders themselves. The enclosed plan, calculated to supply all of the above, should prove a vital force in the preservation of sound and efficient management. It is necessarily technical, but may be briefly summarized as follows:

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FIRST. The General Motors Corporation will cause the Managers Securities Company to be organized under the laws of Delaware with a capital of $28,800,000 of 7% cumulative non-voting convertible preferred stock, $4,000,000 of Class A stock and $1,000,000 of Class B stock.

SECOND. The General Motors Corporation will subscribe for all of the Class A and Class B stock, paying therefor $5,000,000 in cash, and will enter into a contract with the Managers Securities Company agreeing to pay to it for each year from 1923 to 1930, both inclusive, 5% of its net earnings in excess of 7% on the capital employed. On January 1st of each year it will advance $2,000,000 to the Managers Securities Company on account of amount due under this contract, or as a loan, or both, as more fully recited in the plan.

THIRD. The Managers Securities Company will offer to purchase as of October 15th, 1923, the equivalent of 2,250,000 shares of General Motors Corporation common stock at $15 per share, aggregating a total purchase price of $33,750,000, payable $4,950,000 in cash and $28,800,000 in its 7% cumulative non-voting convertible preferred stock; this is at the rate of $2.20 in cash and $12.80 in 7% preferred stock for each share of General Motors Corporation common stock purchased.

FOURTH. A special committee of the Board of Directors will select a list of managers (including directors who are occupying managerial positions) to whom the General Motors Corporation will sell at cost the Class A and Class B stocks of the Managers Securities Company theretofore purchased. Sales so made to these managers will be secured by an agreement under which the General Motors Corporation shall have the right to re-purchase said stock under the terms and conditions recited in the plan.

Contingent upon this plan being ratified by the stockholders, each common stockholder is hereby given the right to supply common stock for the purposes of this plan up to ten per cent. of his total common stockholdings, to be paid for at the rate of $2.20 in cash and $12.80 in 7% cumulative non-voting convertible preferred stock of the Managers Securities Company for each share of General Motors Corporation common stock supplied. Rights to supply stock will apply to common stockholders of record November 10th, 1923. Tenders of stock hereunder, accompanied by stock certificates duly endorsed, should be sent to the Wilmington Trust Company, Trustee, of Wilmington, Delaware, on or before December 15th, 1923, at which time all rights hereunder shall cease and terminate.

E. I. duPont de Nemours & Company owns 7,500,000 shares of General Motors Corporation common stock, title to which is held in duPont American Industries, Inc., the name of which company will be changed to General

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Motors Securities Company. To insure the success of this plan, if ratified by the stockholders, your directors have been fortunate in perfecting an arrangement by which the General Motors Securities Company has agreed to sell its own capital stock to the Managers Securities Company, in amount pro rata to its holdings of General Motors Corporation common stock, under the terms and conditions outlined in the plan. In the event the Managers Securities Company is not successful in securing from other stockholders the additional stock required under the plan, the General Motors Securities Company will sell, under the same terms and conditions, such additional amount of its own capital stock as is needed. Following the sale of its capital stock to the Managers Securities Company the position of General Motors Securities Company will be that it will hold 7,500,000 shares of General Motors Corporation common stock as its sole assets with no liabilities.

Your directors are convinced that many economies not now attainable should be realized through the adoption of this plan and that with its adoption, the total cost of administering the corporation's affairs in the future will be less than it is under our present plan of operation.

The plan as outlined will be submitted for ratification and approval to a special meeting of stockholders of the corporation to be held at its offices in Wilmington, Delaware, on November 26th, 1923.

ALFRED P. SLOAN, JR.,
President

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PLAN OF
MANAGERS SECURITIES
COMPANY

GENERAL MOTORS CORPORATION
224 West 57th Street
New York

PLAN of MANAGERS SECURITIES COMPANY

1. The General Motors Corporation will cause a corporation, Managers Securities Company, to be organized under the laws of the State of Delaware, with an authorized capital of $13,800,000, divided into:

$9,800,000 of 7% cumulative non-voting convertible preferred stock;
$ 4,000,000 of Class A stock; and
$ 1,000,000 of Class B stock.

The 7% cumulative non-voting convertible preferred stock will be in shares of $100 par value, callable in whole or in part at its par value and accrued dividends. Said stock in liquidation shall be preferred as to the par value thereof and accrued dividends in respect to all of the net assets of the company.

In liquidation, after the 7% cumulative non-voting convertible preferred stock has been paid in full at its par value and accrued dividends, the Class A stock shall be preferred as to the par value thereof, plus the total net amount after taxes accruing to the credit of the company by reason of a certain contract between the company and the General Motors Corporation, hereinafter mentioned; and there shall be credited to a Class A surplus account for the benefit of the Class A stock on the books of the Corporation, when and as received, the net amount earned under the aforesaid contract after providing for taxes. This Class A surplus may be used for the payment of special dividends on Class A stock or

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for the purpose of retiring such Class A stock pro rata either in whole or in part at any time at a price equal to the par value thereof plus its pro rata share of this Class A surplus account. All other net income of the corporation shall be credited to a general surplus account.

Class B stock in liquidation shall receive all of the balance of the property.

All dividends paid, except special dividends on the Class A stock as herein provided, shall be paid from general surplus, and the amount of dividends paid from general surplus to the Class A and Class B stocks, respectively, shall be in the proportion that the Class A capital and surplus and the Class B capital and general surplus, respectively, bear to each other.

Upon the organization of the Managers Securities Company it will enter into a contract with the General Motors Corporation wherein it will be covenanted and agreed

(a) Upon the part of the Managers Securities Company that it will sell and deliver to General Motors Corporation its entire authorized issue of Class A and Class B stock for $5,000,000 cash.

(b) Upon the part of General Motors Corporation that in consideration of the premises the General Motors Corporation shall, on or before April 1st in each year, commencing with April 1, 1924, and ending April 1, 1931, pay to the Managers Securities Company 5% of the net earnings of the General Motors Corporation for the preceding calendar year after deducting from said net earnings 7% on the capital employed during said year. This contract will further provide that on or before January 1st of each year beginning on or before January 1, 1924, and including January 1, 1931, the General Motors Corporation will advance $2,000,000 in cash to the Managers Securities Company on account of amount due under this contract and the balance due shall be paid on or before April 1st following as aforesaid. In the event that the amount due under this contract in any year equals less than $2,000,000 then and in that event the General Motors Corporation will make a minimum annual payment of $2,000,000 hereunder. The difference between the cumulative amounts of all payments made hereunder and the cumulative amounts earned under the contract from the beginning to date shall be treated as an unsecured loan by General Motors Corporation to the Managers Securities Company, bearing 6% interest, which loan shall be repaid when the amounts due under said contract equal the total amounts paid by General Motors Corporation, plus interest as aforesaid; and this loan shall not become due otherwise until after the retirement and cancellation of the bonds of the Managers Securities Company hereinafter mentioned.

2. The General Motors Corporation will thereupon sell to such managers (including directors who are occupying managerial positions) of the General Motors Corporation and subsidiary companies, as a special committee of the directors of the General Motors Corporation shall from time to time determine, such amounts of the Class A and Class B stocks of the Managers Securities Company as said committee shall determine and in such amounts to individual managers as said committee shall fix, at not less than cost upon such terms as to time of payment as may be agreed upon between the purchaser and the Finance Committee. All sales of stock of the Managers Securities Company to man-

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agers as aforesaid shall be covered by a written contract, between the seller and the purchaser, wherein it shall be provided that in consideration of the sale upon the terms provided in said contract and the purposes for which said sale is made to the purchaser and of all the premises, the purchasers shall give and grant to General Motors Corporation an irrevocable option to re-purchase all or any part of the shares of either or both classes of stock so sold at any time between January 1st and May 15th in any year up to and including May 15, 1930, as follows:

Class A stock re-purchased under this option on account of the death of an employe or from an employe leaving the company through no fault of his own shall be purchased at a price equivalent to the par value of said stock plus its portion of the Class A surplus account as shown on the books as of April 30th in the year in which said re-purchase is made; in all other cases the price paid shall be the par value of the stock plus 80% of its portion of the Class A surplus. In all events the re-purchase price of Class A stock shall be payable, at the option of General Motors Corporation, either in cash or in common stock of General Motors Corporation on the basis of its net asset value as shown by the published statement of assets and liabilities as of December 31st of the year preceding the date of said purchase.

Class B stock shall be re-purchased at the net asset value thereof as of April 30th in the year in which said option is exercised. For the purpose of determining said net asset value of Class B stock the General Motors Corporation common stock or its equivalent owned by the Managers Securities Company shall be appraised on the basis of the net asset value of General Motors Corporation common stock as shown by the published statement of assets and liabilities of General Motors Corporation as of December 31st of the year preceding the year in which said option is exercised. Payment for re-purchases so made under option herein granted shall be made by the General Motors Corporation in common stock of the General Motors Corporation at the same net asset value as used in determining the net asset value of the Managers Securities Company stock as hereinabove set forth. If any purchaser dies or ceases to be employed by the General Motors Corporation or a subsidiary corporation thereof during the life of said option, the General Motors Corporation shall exercise said option at least with respect to the Class A stock and re-purchase his Class A stock on the terms and at the price aforesaid. Further, in view of the fact that this plan is designed to have substantially interested as stockholders in the corporation only men who are actively contributing to the General Motors Corporation's success, it shall be the duty of the Finance Committee on or before May 15th of each year to review the list of the stockholders of the Managers Securities Company for the purpose of determining whether the stockholding of any manager is disproportionate to the service being currently rendered by him to the General Motors Corporation and, if so, to this extent to re-purchase either or both classes of his Managers Securities Company stock.

The discretion of the Finance Committee in all these matters shall be final and conclusive. In order to facilitate the re-purchase of

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said stock the certificates evidencing the stock, duly endorsed in blank, shall, at the time of sale and delivery by the seller to the purchaser, be placed in escrow with an escrow holder appointed by the Finance Committee of General Motors Corporation, to be held under an escrow agreement in the usual form during the existence of said option. In case the option is not exercised on or before the 15th day of May, 1930, the right and obligation to re-purchase shall end and the escrow holder shall deliver the stock certificates to the said purchaser or his order on April 15, 1931. At the time the said certificates are placed in escrow, the escrow holder shall issue to the said purchaser negotiable certificates evidencing the number of shares so deposited. The purchaser shall have the right to vote and to receive all dividends paid on the Managers Securities Company stock.

3. The Managers Securities Company will offer to purchase the equivalent of a total of 2,250,000 shares of the common stock of General Motors Corporation from the common stockholders of the corporation at $15 per share as of October 15, 1923, aggregating a total purchase price of $33,750,000, payable as follows:

$ 2.20 per share, aggregating $4,950,000 in cash;

$12.80 per share, aggregating $28,800,000 in 7% cumulative non-voting convertible preferred stock of Managers Securities Company at par, carrying dividends accrued from October 15, 1923.

All dividends paid subsequent to October 15, 1923, upon the General Motors Corporation common stock purchased by Managers Securities Company and accruing to the sellers will be credited to the purchase price aforementioned and applied as a deduction from that portion of the said purchase price payable in preferred stock.

All of the stock purchased hereunder by Managers Securities Company, together with the contract between General Motors Corporation and Managers Securities Company, described hereinabove, will be lodged with the Wilmington Trust Company, of Wilmington, Delaware, under a trust indenture to secure an authorized issue of $28,800,000 of seven and one-half year 7% collateral trust gold bonds, dated October 15, 1923, and maturing April 15, 1931; which bonds will be held by the Wilmington Trust Company as Trustee subject to the conversion rights of the holders of preferred stock of Managers Securities Company.

The 7% convertible preferred stock in even multiples of ten shares, at the option of any holder at any time, will be convertible, at par value and accrued dividends, into the 7% collateral trust gold bonds just described, at par value and accrued interest.

4. The indenture securing the authorized issue of $28,800,000 of 7% collateral trust gold bonds of the Managers Securities Company shall, in addition to the usual provisions contained in such instruments, provide as follows:

The Managers Securities Company shall make the following payments to the Wilmington Trust Company, Trustee, on or before April 15th of each year, commencing April 15, 1924, and ending April 15, 1931:

(a) Such portion, in no event less than $1,750,000, of the $2,000,000 payment due

to be paid to the Managers Securities Company by January 1st under its contract with the General Motors Corporation as is not required for the payment of normal Federal corporation taxes, not to exceed 12½%, in respect to such payment from the General Motors Corporation:

(b) The balance, if any, due to be paid to the Managers Securities Company by April 1st under its contract with the General Motors Corporation, less any balance of corporation taxes or necessary expenses not provided otherwise.

(c) An amount equal to the entire net income of Managers Securities Company, before bond interest, from all other sources for the twelve months ending April 1st just preceding.

(d) It is understood, however, that the Managers Securities Company may withhold from the amounts which would otherwise be paid to the Trustee, first, from the amount indicated in paragraph (a) and then from the amounts indicated under paragraphs (b) and (c) an amount equal to the dividend paid on the 7% convertible preferred stock during the fiscal year ending April 15th; provided, however, that in no case, shall such withholdment reduce the net amount paid to the Trustee below the amount required for bond interest.

(e) Provided that all dividends accrued and due on the 7% convertible preferred stock shall have been paid, the Managers Securities Company may also withhold from the payment referred to under paragraphs (b) and (c) above, an amount sufficient to pay dividends on its Class A and Class B stock not in excess of 7% per annum on such paid in capital ($5,000,000) and surplus earned thereon.

All amounts paid to the Trustee, as hereinbefore provided, shall be applied by the Trustee towards the payment of interest on the outstanding 7% collateral trust gold bonds issued in conversion of 7% convertible preferred stock; any balance of said payment shall be applied by the Trustee for the retirement of outstanding 7% convertible preferred stock at par and accrued dividends and the redemption of collateral trust bonds at par and accrued interest by lot, according to such methods as the Trustee shall deem proper; provided, however, that with the assent of 75% of the outstanding 7% convertible preferred stock, the entire amount available for retirement may be used to redeem bonds, or, with the assent of 75% of the outstanding bonds, the entire amount available for redemption may be used to retire 7% convertible preferred stock.

Any and all of the 7% convertible preferred stock acquired by the Trustee shall be retired and cancelled, and upon all such cancellations there shall be cancelled a like par value of authorized 7% collateral trust gold bonds in the hands of the Trustee subject to conversion; to the end that the 7% collateral trust gold bonds authorized and in the hands of the Trustee subject to conversion at all times will be in respect of a closed issue, corresponding in par value to the outstanding 7% convertible preferred stock of the Managers Securities Company.

Failure for six months after the same shall become due and payable to make any payment required to be made to the Trustee shall constitute a default on the part of the Managers Securities Company.

Defendant's Exhibit (DP) No. 456

6459

INVESTMENT IN GENERAL MOTORS CORPORATION COMMON STOCK:

Vice-President J. J. Raskob orally referred to the purchase by this Company, on October 29, 1931, of a block of 300,000 shares of General Motors Corporation common stock at $24.00 a share, which purchase was reported to this Board in the Finance Committee's regular monthly report of November 12, 1931. Mr. Raskob stated that it was the feeling of the Finance Committee that this block of stock should be held as a temporary rather than as a permanent investment and in connection therewith offered the following resolution which, on motion, duly made and seconded, was unanimously adopted:-

WHEREAS, this Board is advised that the Finance Committee believe that the three hundred thousand (300,000) shares of General Motors Corporation common stock, purchased by this Company on October 29, 1931 at $24.00 a share, should be held as a temporary investment;

RESOLVED, that this Board concur in the judgment of the Finance Committee that this stock should be sold at such times and at such prices as the Finance Committee may from time to time deem wise.

I hereby certify that the foregoing is a true excerpt from the Minutes of Meeting of the Board of Directors, E. I. du Pont de Nemours & Company, Inc., held in Wilmington, Delaware on March 21, 1932.

Secretary
E. I. du Pont de Nemours & Company, Inc.,

December 20, 1948.

4457

NOTE: gmc 375 appears in the lower right hand corner. 8604-c-2-b and 10/29/31 are written in the upper right hand corner.

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Defendant's Exhibit (DP) No. 457 6460

Excerpt from Minutes of Meeting #513 of
the Finance Committee,——

E. I. DU PONT DE NEMOURS & COMPANY,

Held in Wilmington, Delaware, on May 15, 1933.

• • • • •

SALE OF GENERAL MOTORS CORPORATION COMMON STOCK:

Report was presented from Mr. A. B. Echols, Vice-President in charge of Finances, dated May 12, 1933 (#8077), in connection with the question of disposing of the 281,220 shares of General Motors Corporation common stock held by this Company as a temporary investment. After discussion, it was moved and unanimously carried that the report be received and ordered filed, and that the following resolutions suggested therein be adopted:—

WHEREAS, this Company under special circumstances purchased a block of 300,000 shares of General Motors Corporation common stock at $24 a share on October 29, 1931; and

WHEREAS, 18,780 shares of this stock were transferred to the so-called permanent investment in General Motors Corporation, in order to round out that investment to 10,000,000 shares; and

WHEREAS, it is the feeling of the Finance Committee that the present so-called temporary investment in General Motors Corporation common stock, aggregating 281,220 shares, should be disposed of at not less than $24 a share, and in such a manner as to not materially affect the market for this stock;

RESOLVED, that Vice-President A. B. Echols and the Treasurer, with the approval of the President and the

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Chairman of the Finance Committee, be authorized to dispose of the above-mentioned shares of General Motors Corporation common stock from time to time and at such prices as in their judgment may seem wise, but in no event at less than $24 a share.

RESOLVED, that the President or any Vice-President of this Company, together with the Secretary or an Assistant Secretary, be and they are hereby authorized and directed to execute the necessary papers to effect the transfer of all or any part of 281,220 shares of common stock of General Motors Corporation.

* * * * *

I hereby certify that the foregoing is a true excerpt from minutes of meeting #513 of the Finance Committee, E. I. du Pont de Nemours & Company, held in Wilmington, Delaware, on May 15, 1933.

F. G. Hess
Sec'y, Finance Committee
E. I. du Pont de Nemours & Company

December 17, 1948

NOTE: In the lower right hand corner appears the number GMC-254. The numbers 8604-c-d-a appear in the upper right hand corner.

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Defendant's Exhibit (DP) No. 458

EXCERPT FROM MINUTES OF MEETING #428
OF THE FINANCE COMMITTEE,
E. I. DU PONT DE NEMOURS & COMPANY,
HELD IN WILMINGTON, DELAWARE,
ON NOVEMBER 4, 1929.

* * * * * * *

PLAN FOR CONVERTING
MANAGERS SECURITIES COMPANY STOCK
INTO GENERAL MOTORS CORPORATION
COMMON STOCK:

The following resolution was offered and, after discussion, was unanimously adopted:—

RESOLVED, that Messrs. W. S. Carpenter, Jr., Vice-President in charge of Finances, and A. B. Echols, Treasurer, be requested to develop a plan under which stockholders of Managers Securities Company who are no longer connected with General Motors Corporation might have an opportunity of converting their Managers Securities Company stock into common stock of General Motors Corporation.

* * * * * * *

I hereby certify that the foregoing is a true excerpt from minutes of meeting #428 of the Finance Committee, E. I. du Pont de Nemours & Company, held in Wilmington, Delaware, on November 4, 1929.

F. G. HESS,
Sec'y Finance Committee,
E. I. du Pont de Nemours & Company

December 23, 1948

NOTE: In the lower right hand corner appears the number GMC 233. The name F. G. Hess is stamped at the end of the certification. The numbers 8604-C-2-B1 appears in the upper right hand corner.

E

4260

IN RE GENERAL MOTORS SECURITIES COMPANY

Since the beginning of our federal income tax law in 1913, intercorporate dividends had always been exempt from tax. In 1918, when General Motors Securities Company was organized, and continuously since then until the Revenue Act of 1936, there was no federal taxation of intercorporate dividends, and there had been no reason to expect any change in this respect.

The holding of the major portion of du Pont's investment in General Motors Corporation through a subsidiary corporation was in the past a practical necessity because of the New York State franchise tax situation. Du Pont has always paid substantial annual franchise tax to the State of New York. The tax laws of that state are such that had the General Motors stock been held directly rather than through a subsidiary corporation many thousands of dollars would have been added annually to that tax burden. During the years prior to 1936 it was possible to take advantage of large savings in New York State franchise tax afforded by the holding of the General Motors investment through a subsidiary without offsetting increase in taxes elsewhere.

Since the beginning, in 1936, of taxation of intercorporate dividends, the management has given consideration to the desirability of working out some plan for non-taxable liquidation of General Motors Securities Company so that the dividends on General Motors investment would flow direct to du Pont rather than through the holding company.

However, because of the 1936 amendments of the Internal Revenue Act, which are as yet untested and for which

regulations were not available until very late in that year, the management felt that it was not justified in proceeding with dissolution of General Motors Securities Company in view of the large potential tax exposure in the event that such dissolution was finally held as not being tax free. In addition to uncertainty with respect to your company's tax position in case of dissolution, the tax position of the substantial minority interest also was not clear.

It was accordingly decided, therefore, to defer action for sufficient time to permit of further investigation and study of the relevant tax law changes and supporting regulations. The subject is under active consideration at the present time.

Prepared 3/5/37

NOTE: In the lower right hand corner appears the number GMC 753. At the top of the document the date 3/5/37 is hand-written.

Defendant's Exhibit (DP) No. 460

COPY

ORIGINAL WITH ORIGINAL PAPERS OF MEETING

APRIL 26, 1918 6465

Mr. M. D. Fisher,
Secretary, Executive Committee.

In order that there may be a record in the Executive Committee files on the Flint Varnish & Color Works proposition in addition to copy of my letter addressed to Mr. Mountain, which was sent to the Committee this week, I would say as follows:

It is understood that Mr. W. . Mountain will be retained as President of the Flint Varnish & Color Works at the same salary which he is getting at the present time and that he will be in full charge of this Company, the same as he is today. There is no question but what Mr. Mountain is a very valuable man and that through his very close connection with Mr. Willys, Mr. Durant, and several other of the large automobile people he holds a very large amount of business. He is also a very prominent man in the vicinity of Flint, Mich., being President of the Chamber of Commerce of that city and also prominent in other affairs.

I was extremely well impressed with Mr. Mountain and am sure he is going to make this Company a very valuable employe.

After discussing with members of the Finance Committee yesterday I notified Mr. Mountain that we would be prepared to take over on some basis satisfactory to Mr. Willys his Preferred stock, for which he asks par, and there is no question but what this is worth par.

(S) W. R. M. Carpenter

RRMC:ETL

NOTE: In the upper right corner appears X-1114 with a line through the number. Beneath this is 1008B. Return to Room 9059 is stamped across the document. (The number is changed to read 9069.) Across the bottom of the document is stamped Return to Executive Committee Room 9069.

Defendant's Exhibit (DP) No. 461

6466

Defendants' Tri

Letterhead of

DUNHAM BODY COMPANY
Succeeding D. B. Dunham & Son
Builders & Repairers of

AUTOMOBILE COACH WORK
Avenue B and Miller Street

Newark, N. J., October 6, 1922

E. I. DuPont DeNemours Co.,
Parlin, N. J.

Attention: Mr. Briggs

Gentlemen:—

The writer, after examining Chandler car which was sprayed at Parlin, wishes to state that there are a great many details on this which certainly could not be passed on, even the cheaper grade of work.

One thing above all is that you must try to manufacture some glazing compound that would satisfactorily fill up file marks in the metal. In most all repair jobs you will find that you have to do a great deal of filling as most of the cars have been damaged at one time or another, dents removed and big file marks made in the metal. In some cases we have to prime the car and glaze it and in many instances put as many as five coats of rough stuff on the bodies in order to have a proper surface. This all takes a great deal of time and we were hoping your material would eliminate a great deal of these under-coats.

Your system for sales quality jobs would probably work out and of course we will give it a good trial. However, in the kind of business we do, where every color is different

4264

6167

and we have to cut in the lower and upper panels with different color, as well as sometimes the window ridges, is going to be a very difficult job indeed to handle the product, unless we can get the customers to accept a solid color. We believe, however, it will work extremely well on cars such as Dodges, Fords, Buicks, Chevrolets, etc.

The writer is very enthusiastic over this product, but feels a great deal more of experimental work is needed, that is from the practical end. We believe we can help you in lots of ways in getting this product to satisfactory state where same would be useful in all branches of work.

It will also be absolutely necessary in conjunction with your spraying product to have a substance that can be brushed on to

take care of finer details, as instrument board, mouldings, etc.

We are today rubbing down the black surface on the Chandler car and are going to apply a coat of varnish over same, and are also going to make various other tests, and of course will advise you from time to time.

Yours very truly,

DUNHAM BODY COMPANY

LD:CV

NOTE: Handwritten Paint & an illegible word under date. Illegible handwriting over Dunham Body Co. on last page.

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4265

Defendant's Exhibit (DP) No. 462

GENERAL MOTORS CORPORATION

6168

Production of Open Cars

1915 through 1930

Year	Total Number of Open Cars Produced by General Motors	Number of Open Cars Produced by Chevrolet and Buick	Buick and Chevrolet Open Cars as Percentage of Total General Motors Open Cars
1915	84,168	55,530	66
1916	230,259	182,933	79
1917	299,488	221,155	74
1918	199,796	149,802	75
1919	319,336	231,915	73
1920	273,073	217,347	80
1921	156,183	127,079	81
1922	280,528	240,049	86
1923	445,429	390,437	88
1924	285,344	240,654	84
1925	264,183	252,341	96
1926	191,559	174,040	91
1927	171,273	147,473	86
1928	160,918	137,795	86
1929	112,202	96,364	86
1930	57,111	48,796	85

4265

Defendant's Exhibit (DP) No. 463 (5463)

SALES BY DU PONT OF PLASTICS TO FISHER BODY DIVISION OF GENERAL MOTORS CORPORATION

Years 1927-1931, Inclusive

1927	$ 9,731
1928	2,763
1929	51,152
1930	122,798
1931	12,845

Source: Du Pont Viscoloid Company Billings from Accounts Receivable Ledger Sheets.

Defendant's Exhibit (DP) No. 464

6470

WALTER S. CARPENTER, JR.

POSITIONS HELD IN DU PONT COMPANY
1909 TO DATE

Clerk, Purchasing Department (Chile)	Dec. 1, 1909	-	May 31, 1911
Clerk, Treasury Department (Chile)	June 1, 1911	-	Jan.20, 1912
Development Department:			
Clerk	Jan. 2, 1912	-	Nov.30, 1914
Development Staff	Dec. 1, 1914	-	Apr.30, 1915
Acting Assistant Director	May 1, 1915	-	Aug.31, 1915
Assistant Director	Sep. 1, 1915	-	Mar.31, 1917
Director	Apr. 1, 1917	-	May 12, 1919
Treasurer	Jan.10, 1921	-	May 16, 1926
Vice President	Apr.30, 1919	-	May 20, 1940
President	May 20, 1940	-	Jan.19, 1948
Board of Directors:			
Member	May 1, 1919	-	To date
Chairman	Jan.19, 1948	-	To date
Executive Committee:			
Member	May 1, 1919	-	Jan.19, 1948
Vice Chairman	Apr.19, 1926	-	May 20, 1940
Chairman	May 20, 1940	-	Jan.19, 1948
Finance Committee:			
Member	Nov.28, 1921	-	To date
Chairman	Mar.19, 1930	-	May 20, 1940

4269

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Defendant's Exhibit (DP) No. 465

6171

CRAWFORD H. GREENEWALT

POSITIONS HELD IN DU PONT COMPANY
1922 TO DATE

Control Chemist:	
Paint, Lacquer and Heavy Chemical Department	Oct. 12, 1922 - Oct. 21, 1923
Chemical Department	Oct. 22, 1923 - Sep. 30, 1924
Chemical Department, Experimental Station:	
Chemist	Oct. 1, 1924 - Feb. 28, 1927
Group Leader	Mar. 1, 1927 - July 31, 1933
Research Supervisor	Aug. 1, 1933 - June 30, 1939
Assistant Director	July 1, 1939 - May 31, 1942
Director, Chemical Division, Grasselli Chemicals Department	June 1, 1942 - Dec. 31, 1942
Manager, Technical Division, Explosives Department	Jan. 1, 1943 - Feb. 4, 1945
Administrative Assistant to Vice President Stine	Feb. 5, 1945 - Mar. 11, 1945
Assistant Director, Development Department	Mar. 12, 1945 - Aug. 31, 1945
Assistant General Manager, Pigments Department	Sep. 1, 1945 - May 31, 1946
Vice President	June 1, 1946 - Jan. 18, 1948
President	Jan. 19, 1948 - To date
Board of Directors:	
Member	Jan. 19, 1942 - To date
Executive Committee:	
Member	June 1, 1946 - To date
Vice Chairman	May 19, 1947 - Jan. 18, 1948
Chairman	Jan. 19, 1948 - To date
Finance Committee:	
Member	Jan. 19, 1948 - To date

4269

Defendant's Exhibit (DP) No. 556

Defendants' Trial Ex. No. DP-556

6172

E. I. DU PONT DE NEMOURS AND COMPANY

Ammonia Department

Sales of Antifreeze

All figures are rounded off to the nearest thousand.

Year	Total Sales To All Customers Gallons	Total Sales To All Customers Dollars	Sales to All General Motors Divisions Dollars	Dollar Sales to Customers Other than General Motors as Percentage of Total Dollar Sales
1930	1,811,000	$ 488,000	0	100.00
1931	1,223,000	327,000	0	100.00
1932	1,356,000	465,000	0	100.00
1933	1,979,000	628,000	0	100.00
1934	2,742,000	1,139,000	0	100.00
1935	4,848,000	2,137,000	0	100.00
1936	5,564,000	2,299,000	371,000	83.86
1937	8,754,000	3,734,000	314,000	91.59
1938	8,521,000	3,638,000	283,000	92.22
1939	9,638,000	4,036,000	396,000	90.19
1940	14,964,000	7,692,000	782,000	89.83
1941	20,328,000	13,071,000	710,000	94.57
1942	11,477,000	7,110,000	302,000	95.75
1943	14,747,000	12,390,000	519,000	95.81
1944	14,551,000	10,033,000	346,000	96.55
1945	12,415,000	10,896,000	485,000	96.55
1946	17,835,000	11,705,000	679,000	94.20
1947	20,173,000	12,582,000	1,705,000	86.45
1948	35,025,000	29,178,000	2,564,000	91.21

Prepared from Company Records
Treasurer's Department

E

6871

Defendant's Exhibit (DP) No. 557

DU PONT

FABRICS INDUSTRIAL MASTER TRADE REPORT - Correspondent's Copy

Received for Typing 1/13/50
Date Typed 1/13/50

Customer Chevrolet-Indianapolis Div., General Motors
St. and No. 340 White River Pkwy., W.Dr.S. Corp.
City - Zone Indianapolis 6
County - State Indiana
Persons Interviewed See reverse side

B. C. - 23
Class 1
Report No. 2
Salesman J. W. Richardson
Date of Call 1/12/50

COPIES TO:

1. NBG. ✓	5. MSKiekewitz, N.Y.
2. TA	6. AL Brown, Newburgh
3. RCW	7. HJ Jonemann,
4. JWR	8. Fairfield

1. Associated Companies, Affiliations, Subsidiaries and Branches Part of Chevrolet Motor Div., General Motors Corp.

2. General type of business Manufacturer - Chevrolet trucks and panel deliveries, also manufacture cab shells for GMC Truck light trucks and General Motors of Canada, Oshawa.

3. Products made from our type materials Upholstery and trim for truck and panel delivery jobs.

4. Indicate (in order of importance) firm buys on: Friendship 4 Price 1
Quality 2 Service 3

5. Attitude toward du Pont. Excellent

6. Our prospects for regular business.
Favorable.

7. Names and titles of individuals to receive mailings and du Pont Magazine.

	Name	Title	Check (x) For du Pont Magazine
1	Earl A. Hall, Plt. Mgr.		X
2	L. J. Carlen, Director of Purchases		X
3	E. C. Mertz, Resident Engineer		X
4			

8. DU PONT SALES (yards)

	Newburgh	Fairfield
1948		500,068 yds.
1949		341,743 yds.

9. Other Remarks on Back.

Est. Annual* Consumption du Pont and Competitive Products

PYROXYLIN COATED FABRICS AND PAPER

Quality and Width	Price	Manufacturer	Supplier	Yards

W. J. P.
JAN 20 19..

RUBBER (NATURAL AND SYNTHETIC) COATED FABRICS AND SHEET STOCK

36" Curtain Material, Part 3806524	$.89	?	?	30,000
48" Headlining-Part 3808698	.65	?	?	90,000

RESIN COATED FABRICS AND SHEET STOCK

Part 3676062 - Red Spartan				
"Fabrilite" 6926	Contract	DuPont	Du Pont	240,000
Naugahyde	"	U.S.Rubber	U.S.Rubber	240,000
Goodall Reddo	"	Goodall	Goodall	320,000
Part 3676052 - Brown				
Weymouth	$1.29	Weymouth	Weymouth	80,000

What is the potential yardage of this firm if raw materials were available?

* Based on 1946 purchases

FF1600A-5M-5-47 □

USE REVERSE SIDE FOR ADDITIONAL REMARKS, LEFT SIDE AS TOP. (over)

6273

6273

6177 [6479]
Defendants' Trial Ex. No. DP-557

Persons Interviewed
L. J. Carlen, Director of Purchases
D. E. Gleason, Asst. Director of Purchases
Jack Wilson, Superintendent, Material and Production Control
John Lowe, " " " "
Clarence Abram, " " " "
Vance Phillips, Chief Inspector
E. C. Mertz, Resident Engineer
W. P. Wood, Asst. Resident Engineer
F. C. Schwengel, Special Projects Engineer
Clyde Smith, Cutting Room Inspector
Harry Webber, Cutting Room Foreman

Main purpose of visit was to observe laying and cutting of "Fabrilite" 6026, Red Spanish, part 3676062, 13,000 yards of which were shipped January 6 on IF-948. Our material laid absolutely flat--better than any shipment previously observed. A lay of U.S. Naugahyde was being made on an adjoining table and, although satisfactory, it was not quite as free from wrinkles as our material. In addition, this shipment from U.S. Rubber was darker and duller than the Chevrolet standard. Learned that a previous shipment of U.S. material was darker and brighter than standard.

Our 6026 was very close in color, grain and finish to the Chevrolet standard; however, there was some noticeable color variation as illustrated by swatches of the complete lay which have been forwarded to Mr. Jenemann at Fairfield. Job No. C-1841306-A was slightly lighter red than standard; while Job No. C-1847204-C was very slightly darker than standard. Attached swatch taken from January 6 shipment is practically "on the nose" for color, grain and finish.

For the first half of 1950 Goodall was awarded 40% of the 3676062 red Spanish business on a price substantially lower than our quotation. U.S. Rubber and Du Pont each were awarded 30%. Weymouth again was awarded the business on brown, part 3676052 at a price 3¢ lower than our quotation. Textileather got no business whatsoever for the first half of 1950.

Rubber curtain material and rubber headlining (parts 3806524 and 3808698 respectively) were awarded to unknown competition at 14¢ and 35¢ less per yard than our quotations on these two items respectively.

Within the last few days a production sample of Goodall's part 3676062 was approved by Chevrolet-Indianapolis Engineering Department. However, material and Production Control Section is somewhat doubtful as to whether Goodall's production shipments will meet quality and delivery requirements. If Goodall fail to come through properly our releases will benefit considerably.

Projected production at Indianapolis for the first three months of 1950 is: 31,000 complete trucks per month, 3500 panel deliveries per month, and 6000 cabs per month (not upholstered), for Pontiac and Oshawa.

(Note: Earl A. Hall has replaced J. H. Glass as Plant Manager at Chevrolet-Indianapolis. Mr. Glass has gone to Flint Stamping to take over Mr. Hall's previous assignment.)

EXCERPTS FROM THE PAINT, LACQUER AND CHEMICALS DEPARTMENT MONTHLY REPORT TO THE EXECUTIVE COMMITTEE FOR NOVEMBER, 1926, DATED DECEMBER 23, 1926.

SALES	November 1926	October 1926
Duco (Domestic)		
Parlin & Flint	$ 594,615.59	$ 858,973.98
Other Products (Domestic)		
Parlin	249,063.79	270,973.51
Flint	93,737.05	143,299.98
Transfers		
Duco (P. & F.)	13,240.40	9,502.15
Parlin Other Products	70,826.04	78,554.42
Flint Other Products	90.02	292.45
Export		
Duco (P. & F.)	43,689.96	71,182.20
Parlin Other Products	3,434.84	7,440.38
Flint Other Products	2,880.38	5,932.30
TOTAL	$1,071,578.07	$1,446,151.37
Duco	651,545.95	939,658.33
Parlin Other Products	323,324.67	356,958.31
Flint Other Products	96,707.45	149,524.73

Total Domestic Sales for the month of November are lower than any month of the year, showing decrease under September our previous high month of 41% and decrease of 26% as compared with the month of October.

Total Domestic Sales for the first eleven months of 1926 amounted to $13,700,000 as compared with $11,842,000 in the corresponding period of 1925.

6176

The decrease of $264,000 in November sales of Duco and Thinner as compared with the month of October is caused almost entirely by decreased activity in the automobile manufacturing field.

Sales in the industrial field also showed a marked decrease, which was offset to some extent by increased sales to the furniture trade. November was the largest month in the sale of Clear Duco to the Furniture trade. We attribute this increase mainly to our lower prices which were announced in October, because with them we were able to take on several new accounts and regain several accounts previously lost, as well as to make increased sales to many of our regular customers.

November sales of colored Duco to automobile manufacturers amounted to 50,809 gallons, of which 18,385 gallons represent sales to the General motors group, October sales being 81,749 gallons and 33,175 gallons respectively. Sales of colored Duco to automobile refinishers in November were 17,027 gallons as compared with 27,097 gallons in October. November sales of colored Duco amounted in total to 98,000 gallons, 10,000 gallons of which were export sales. This quantity is divided into industries and groups as follows:

General Motors Units	19%
Other Motor Manufacturers	33
Automobile Refinishers	17
Railroads	1
Furniture Manufacturers	8
General Industrial	12
Export	10
	100%

The decrease in sales of Parlin products other than Duco and Duco thinner in November as compared with October is occasioned mainly by smaller sales in the decorative group particularly Enamels and Thinners. Shipments in the non-decorative group were larger in volume, but consisted mainly of commodities carrying very low selling prices, such as ethyl acetate and airplane dope. The decrease in sales of

—10—

enamels is caused by decreased shipments of Engenamel, which is explained by October sales being inflated by a large shipment of this material to the Chevrolet Motor Company.

—12—

PRICE AND COMPETITIVE SITUATION

While there is nothing alarming at the present time in the price and competitive situation in the country, still

—13—

we find such firms as Sherwin Williams, Egyptian Lacquer Company and the Zeller Lacquer Mfg. Company taking a few accounts away from us on a price basis, particularly on lacquers and enamels. The last named concern seems to specialize in price cutting. However, we do not feel that the situation has reached a point where any radical changes should be made in our schedules.

The General Motors Corporation are unwilling to make a requirements contract for 1927. We have reduced the price of thinners from $1.75 per gallon to $1.50 per gallon in one instance, and from $1.40 to $1.20 in another instance, these prices being subject to a quantity trade

discount, which would in the latter named instance mean a delivered price to General Motors of $1.026 per gallon. Competition in the pyroxylin finish field has apparently caused the General Motors to adopt this attitude.

In addition to the above, some divisions of the General Motors Corporation at least will undoubtedly make their own thinners.

NOTE: Paragraph starting "Sales in the industrial" has illegible handwriting in the left margin.

Defendant's Exhibit (DP) No. 559

6179

Excerpt from the 1937 Annual Competitive Report of the Fabrics and Finishes Department which is the paragraph that immediately follows the third paragraph of Government Trial Exhibit No. 1377:

Pittsburgh Plate Glass Co. secured the next largest share of automotive finishes business, estimated at 18.58% of the industry's total purchases, through supplying practically all of Chrysler's requirements.

4277

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Defendant's Exhibit (DP) No. 560

(1380)

Excerpt from the 1940 Annual Competitive Report of the Fabrics and Finishes Department, which is the full paragraph quoted in part in Government Trial Exhibit No. 1380:

Automotive Finishes

The improved competitive position in 1940 over 1939 resulted largely from General Motors securing a greater portion of the total automobile business (43.9% in 1940 against 42.1% in 1939). The second largest supplier of finishes to the automobile industry, Pittsburgh Plate Glass Co., bettered their competitive position from 13.9% in 1939 to 14.8% in 1940 for a similar reason, i.e. their principal customer, Chrysler Corp., also improved their competitive position in the automotive trade.'

Defendant's Exhibit (DP) No. 561

6181

Excerpt from the 1941 Annual Competitive Report of the Fabrics and Finishes Department which is the paragraph that immediately follows the first paragraph of Government Trial Exhibit No. 1381:

Pittsburgh Plate Glass Company, the second largest supplier of finishes to the automobile industry, secured 13.6% of total available business in 1941 compared with 14.8% in 1940. Their loss in competitive position came about through Chrysler Corporation, their principal customer, manufacturing only 20% of the automobile industry's 1941 total output against 23% in 1940.

4279

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Defendant's Exhibit (DP) No. 562

Excerpt from 1947 Annual Competitive Report of the Fabrics and Finishes Department which is the paragraph that immediately follows the third paragraph of Government Trial Exhibit No. 1383:

Increased sales for bookbinding, automotive trim and upholstery and surgical tape were chiefly responsible for du Pont's improvement in 1947. In the first two industries we either regained business from competition, which was temporarily lost during the period of fabric shortage, or obtained new business outright on the basis of superior quality and service.

Defendant's Exhibit (DP) No. 563 6183

Excerpt from 1950 Annual Market Survey of the Fabrics and Finishes Department which is the paragraph that immediately follows the second paragraph of Government trial Exhibit No. 1386:

During 1950 we secured new business at several important automobile manufacturers, namely Ford, Willys and Studebaker. An increased percentage of Fisher Body's "Teal" business resulted from an improved product. Our major competitors in the Automotive market with an estimate of their portion of the sales are shown:

Major Manufacturers	1950 Sales Estimated	Per Cent of Total Auto Market 1950	1949
Du Pont	$6.6 million	16.8	15.2
Ford (a)	6.5 "	16.3	15.0
Textileather	4.6 "	11.5	11.1
U. S. Rubber	3.3 "	8.3	6.7
Goodall Sanford	3.2 "	8.0	10.7
Landers	2.6 "	6.5	5.0
Goodrich	2.5 "	6.3	6.7
Federal	2.1 "	5.3	5.3
All Others	8.6 "	21.0	24.3

6281

Defendant's Exhibit (DP) No. 564

6484

Excerpt from the 1935 Annual Competitive Report of the Fabrics and Finishes Department, which is the full paragraph quoted in part in Government Trial Exhibit No. 1375:

The decline in our position in rubber fabrics for automotive industry is due to General Motors' adoption of all-steel top for all their models except the standard Chevrolet, while other manufacturers whose business goes to competition have not abandoned fabric tops to the same extent. Further declines in available business from this field are expected as all-steel tops become more generally adopted. During 1935 the position of du Pont and leading competitors was:

Chase	18.0%
DuPont	17.7%
Boston Woven Hose	14.0%
All Others	50.3%

Defendant's Exhibit (DP) No. 565 6185

EXCERPTS FROM

DU PONT PRODUCTS INDEX

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

E. I. DU PONT DE NEMOURS & CO. (INC.)
Advertising Department
WILMINGTON 98, DELAWARE

4283

6186

COPYRIGHT 1946 BY
E. I. DU PONT DE NEMOURS & COMPANY (INC.)
WILMINGTON 98, DELAWARE

JUNE · 1946

Bound in Du Pont "Fabkote" Pyroxylin Coated Material,
17 Point, Color 4075, SB finish, MS grain.

4284

6187

INTRODUCTION

THIS index contains information on chemicals and allied products manufactured and sold by E. I. DU PONT DE NEMOURS & COMPANY (INC.), and its subsidiaries.

The purpose of this index is to provide a convenient source of information on the properties, uses and other data for Du Pont products, where it was found practical to include such material.

Descriptions of products are limited to the bare essentials. For more detailed information, contact main or branch offices of the departments, divisions or subsidiaries which market the products. The addresses of these offices are given in he white section at the introduction for each department, division and subsidiary.

This INDEX contains four sections which are:

1. **GREEN PAGES:** *A major portion of Du Pont trade-marks are listed in alphabetical order.* The page number after each refers to the page in the white section carrying the description of the product under the department or subsidiary by which it is marketed.

2. **BUFF PAGES:** *The names of all Du Pont products are listed in alphabetical order.* The page number after each product refers to the page in the white section carrying the description of the product under the department or subsidiary by which it is marketed.

3. **WHITE PAGES:** *Here descriptions of products are classified under their respective department, division or subsidiary.* Addresses of offices and plants appear at the introduction for each department, division and subsidiary.

4. **BLUE PAGES:** *Geographical section which shows locations of offices, plants and certain stock points.*

ADHESIVES

	DIVISION OR DEPARTMENT	PAGE NO.
Addition Agents (Plating) (*Continued*)		
— "RH" 1085 Addition Agent (See "RH" 1032 and "RH" 1085 Addition Agent)	*Electrochem*	132
— Sulfamate Lead	*Electrochem*	132
— "Zin-O-Lyte" Addition Agent "O"	*Electrochem*	132
Adhesive Bases (See "Elvacet" Polyvinyl Acetates and "Elvanol" Polyvinyl Alcohols)	*Electrochem*	136
Adhesives (See also Cements)		
— n-Butyl Methacrylate (See Higher Ester Methacrylate Polymers)	*Ammonia*	124
— n-Butyl-isobutyl Methacrylate Mixture (See Higher Ester Methacrylate Polymers)	*Ammonia*	124
— "Duco" Household Cement	*Finishes*	151, 154
— Du Pont Adhesives No. 77 and No. 78	*Grasselli*	167
— Ethyl Methacrylate (See Higher Ester Methacrylate Polymers)	*Ammonia*	124
— Higher Ester Methacrylate Polymers	*Ammonia*	124
— Isobutyl Methacrylate (See Higher Ester Methacrylate Polymers)	*Ammonia*	124
— Methyl Methacrylate Polymer	*Ammonia*	125
— Polyvinyl Acetate (See "Elvacet" Polyvinyl Acetates)	*Electrochem*	136
— Polyvinyl Alcohol (See "Elvanol" Polyvinyl Alcohols)	*Electrochem*	136
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NOTE: Vertical lines added to index to indicate pages describing Adhesives and Cements.

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Diisobutyl Adipate—$(CH_3)_2CHCH_2OOC(CH_2)_4COOCH_2CH(CH_3)_2$: Colorless, odorless liquid; B.P. 278° C.; weight per gal. 8.0 lbs. USE: As plasticizer for synthetic resins, finishes and fibers; especially applicable for low temperature plasticization of elastomers. CONTAINERS: 55 gal. drums.

Diisopropyl Carbinol (2,4-Dimethyl Pentanol—3)—$([CH_3]_2CH)_2CHOH$: Colorless liquid; B.P. 140° C.; M.P. below −70° C.; weight per gal. 6.9 lbs.; flash point 49° C. USE: As a solvent; organic intermediate; denaturant. CONTAINERS: 55 gal. drums.

Diisopropyl Ketone—Technical—$([CH_3]_2CH)_2CO$: Colorless, clear liquid; camphoraceous odor; boiling range 114–127° C. USE: As a solvent and softening agent for nitrocellulose plastics. CONTAINERS: 8,000- and 10,000-gal. tank cars; 55 gal. drums.

Dimethyl Ether (Methyl Ether)—CH_3OCH_3: Colorless, inflammable liquid. B.P. −24.5° C.; F.P. −138° C.; Sp. Gr. 0.661 at 20° C. USE: In refrigeration; as a solvent and extraction agent; as a propellant for sprays; as a reaction medium. CONTAINERS: 50 lb. pressure cylinders.

Dimethyl Formamide—$HCON(CH_3)_2$: Water-white liquid; B.P. 152.8° C.; Sp. Gr. 0.9535 (15.6°/15.6° C.). USE: As a solvent for synthetic resins and acetylene. CONTAINERS: 55 gal. drums.

Dimethyl Sulfate (Methyl Sulfate)—$(CH_3)_2SO_4$: Clear, poisonous liquid; M.P. −38.8° C.; B.P. 188.8° C.; Sp. Gr. 1.333 (15°/4° C.). USE: As a methylating agent in making intermediates, dyes, and synthetic drugs. CONTAINERS: 100- and 555-lb. steel drums.

Dimethylolurea (DMU) (See "Arboneeld" Dimethylolurea, Page 123).

Du Pont Antifoam B-25: Non-volatile liquid; boiling range 200–300°C. USE: For foam prevention in various processes, such as beet sugar processing; in the manufacture of paper pulp; for caustic soda concentration; in treatment of black liquor from sulfate pulp. CONTAINERS: 55 gal. drums.

Du Pont Frothing Oils—B-22, B-23, B-24, B-25: By proper blending of these oils, a froth of the required brittleness to effect the most efficient separation can be obtained. USE: Adapted to flotation work with straight gold ores or tailings from gold cyanide plants; used for complex separation, such as zinc-copper-lead, zinc-lead-silver. CONTAINERS: 55 gal. drums.

Ethanol Formamide—$HCONHCH_2CH_2OH$: Colorless, hygroscopic liquid; boiling range 135–145°C. at 0.5–1.0 mm.; 9.8 lbs. per gal. USE: As a plasticizer for resins, adhesives, printers rolls, coated paper and textile sizes. CONTAINERS: 55 gal. drums.

Ethylene Glycol—$C_2H_4(OH)_2$: Colorless, practically odorless liquid; very hygroscopic; B.P. 197°C.; Sp. Gr. 1.117 (15.6°/15.6°C.). USE: Explosive manufacture; automotive anti-freeze preparations; airplane coolant; general solvent and plasticizer. CONTAINERS: 8,000- and 10,000-gal. tank cars; 55 gal. drums.

Formamide—Technical—$HCONH_2$: Heavy, colorless, odorless, hygroscopic liquid; decomposes at B.P. (190°C.); F. P.+2.55°C. USE: Exceptionally good solvent; softener, particularly as substitute for glycerol and ethylene glycol; chemical intermediate. CONTAINERS: Tank cars; 55 gal. drums.

"Freon" Refrigerants (See Kinetic Chemicals, Inc. Page 195).

Glycolic Acid (See Hydroxyacetic Acid, below).

"Hexalin" Solvent (Cyclohexanol)—$C_6H_{11}OH$: Water-white liquid; F. P. + 23°C. (usually shipped with 2.5% methanol as antifreeze); boiling range (pure) 160.4–162.4°C. USE: As a solvent homogenizer and stabilizer in the paint and varnish, soap, dry cleaning and textile industries. CONTAINERS: 8,000- and 10,000 gal. tank cars; 55 gal. drums. (Also sold by Organic Chemicals Department—See Page 188).

Higher Alcohols—HTP—B-22, B-23, B-24, B-25, B-27, B-30, B-41: High-boiling branch chain synthetic aliphatic alcohols; boiling range 150–300°C. USE: As antifoam and flotation agents; as solvents and constituents of lubricants, fuels, metal cleaners, insecticides; intermediates and others. CONTAINERS: 8,000- and 10,000-gal. tank cars; 55 gal. drums.

Higher Ester Methacrylate Polymers—$(CH_2=C(CH_3)COOR)_n$: R is ethyl, n-butyl, isobutyl and n-butyl-isobutyl (50–50); clear, transparent, thermoplastic resins in granular form; densities from 1.02–1.11; softening temperatures from 30–70°C. USE: Coating compositions; adhesives; textile finishes; tougheners for waxes. CONTAINERS: Fiber drums (Also available in monomeric form).

Hydroxyacetic Acid—Technical Grade 70% (HO CH_2COOH): A light straw-colored liquid containing approximately 70% Hydroxyacetic Acid with traces of other organic acids. USES: In leather dyeing and tanning; textile dyeing; manufacture of cleaning compounds; copper pickling; adhesives. CONTAINERS: 6,000- and 10,000-gal. tank cars; 500 lb. wooden bbls.

Isobutanol (Isobutyl Alcohol)—$(CH_3)_2CH.CH_2OH$: Water-white liquid; B. P. 107.9°C.; M. P. − 108°C.; Sp. Gr. 0.806. USE: In the manufacture of intermediates, organic solvents, synthetic dyes, fruit essences, perfumes, paint removers, lacquers and others. CONTAINERS: 8,000- and 10,000-gal. tank cars; 55 gal. drums.

Isobutyl Acetate (88–92% in Isobutanol): Colorless liquid; fruity odor; boiling range 100 – 130°C.; Sp. Gr. 0.862 (25/25°C.); soluble in alcohols, ether and hydrocarbons. USE: Nitrocellulose solvent for varnishes and lacquers. CONTAINERS: 8,000- and 10,000-gal. tank cars; 55 gal. drums.

Isobutylamine, Mono—$(CH_3)_2CH.CH_2NH_2$: Colorless liquid; ammoniacal odor; strongly caustic; B. P. (pure) 68.0°C.; M.P. −85.5°C.; Sp. Gr. at 15.6°C. is 0.739; flash point 15°F.; soluble in water, alcohol, ether and hydrocarbons. USE: Manufacture of insecticides; and organic intermediate. CONTAINERS: 55 gal. drums.

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Note: Vertical lines drawn to set off descriptions of Adhesives and Cements

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Isobutyl Hydroxyacetate (Isobutyl Glycolate)— $HOCH_2COOCH_2CH(CH_3)_2$: Colorless liquid; B. P. 172°C.; Sp. Gr. 1.020 (60°/60°F.). USE: As a general solvent in lacquers and printing inks. CONTAINERS: 55 gal. drums.

Isobutyl Propionate (83–87% in Isobutanol): Water-white liquid with pleasant, non-residual odor; boiling range 115 – 139°C.; Sp. Gr. 0.853 (25/25°C.). USE: As a varnish, paint and lacquer solvent. CONTAINERS: 8,000- and 10,000-gal. tank cars; 55 gal. drums.

Isobutyraldehyde— $(CH_3)_2CH.CHO$: B. P. 64.5°C.; F. P. −65.9°C.; Sp. Gr. 0.794 (15.6°/15.6°C.). USE: As an intermediate; in the manufacture of rubber accelerators, synthetic resins; in the synthesis of acetals. CONTAINERS: 55 gal. drums.

Isobutyric Acid— $(CH_3)_2CH.COOH$: Colorless liquid; B. P. 154.4°C.; F. P. −47°C.; Sp. Gr. 0.946–0.951 (20°/20°C.). USE: In the manufacture of plasticizers and solvents, flavors and perfume bases; as a disinfecting agent. CONTAINERS: Special steel and aluminum 55 gal. drums.

"Lorol" Fatty Alcohol: A mixture of straight chain (normal), even-numbered carbon atom alcohols with lauryl alcohol predominating; Sp. Gr. 0.833–0.835 (25/25°C.). USE: As an intermediate in the manufacture of detergents, plasticizers, insecticides and perfume esters. CONTAINERS: 10,000 gal. tank cars; 55 gal. drums. (Sold by Organic Chemicals Department—See Page 186).

Methacrylic Acid, Crude Monomer— $CH_2:C(CH_3)COOH$: Dark, opaque, thick liquid of about 85% purity. USE: In plastics manufacture. CONTAINERS: 55 gal. drums.

Methanol— CH_3OH: Colorless, inflammable liquid; B. P. 64.5°C.; M. P. −97.8°C.; Sp. Gr. 0.7912. USE: As an ingredient of automotive and other antifreezes; in the manufacture of formaldehyde; as a methylating agent in manufacturing many methyl compounds (dimethyl phthalate, dimethyl sulfate, methyl chloride and others); as a constituent of many solvents for varied purposes. CONTAINERS: 8,000- and 10,000-gal. tank cars; 55 gal. drums.

Methoxymethoxyethanol (MME) — $CH_3OCH_2OCH_2CH_2OH$: Water-white liquid; boiling range 160 – 165°C.; Sp. Gr. 1.038 (25°/25°C.). USE: General solvent; preparation of esters for use as solvents and resin plasticizers. CONTAINERS: 55 gal. drums.

***Methyl Chloride:** (See Electrochemicals Department, Page 129).

Methyl Formate—Technical (97%)— $HCOOCH_3$: Water-white, volatile liquid; B. P. 31.8°C. USE: As a fumigant and solvent; in production of formates and organic chemicals. CONTAINERS: 8,000- and 10,000-gal. tank cars; 55 gal. drums.

Methyl Glutarate— $(CH_2)_3(COOCH_3)_2$: Water-white liquid; B. P. 180°C. at 50 mm.; density 1.09. USE: Chemical intermediate; solvent; plasticizer synthesis. CONTAINERS: 55 gal. drums; tank cars.

Methyl Hydroxyacetate (Methyl Glycolate)— CH_3OOCCH_2OH: Colorless liquid; B. P. 151°C.; Sp. Gr. 1.20 (60°/60°F.). USE: As a general solvent for synthetic resins. CONTAINERS: 55 gal. drums.

Methyl Methacrylate Polymer— $(CH_2=C(CH_3)COOCH_3)_x$: Colorless, light stable, high softening thermoplastic resin in granular form; density 1.2; tensile strength—8,000 p.s.i. USE: Adhesive; coating composition ingredient; textile finishes and sizes. CONTAINERS: Fiber drums. (Also available in monomeric form).

"Mycoban" Calcium Propionate: Trade mark for Calcium Propionate used in food industry. (See Calcium Propionate, Page 123).

"Mycoban" Sodium Propionate: Trade mark for Sodium Propionate used in food industry. (See Sodium Propionate, this page).

"Opalwax" Synthetic Wax: A high-melting product (86–88°C.) which has unusual properties of grease resistance and penetration; extremely insoluble. USE: For manufacturing candles, shoe polish and carbon paper; for impregnating paper, wood, cloth, etc.; for electrical condenser impregnation. CONTAINERS: 100 lb. bags.

"Orel" Rubber Lubricant: Designed for application to rubber parts and metal-to-metal chassis contacts on automobiles, buses and trucks. Effective as a penetrant. CONTAINERS: 1 gal. cans (three cans to a case); 5 gal. cans.

Polythene (Polymerized Ethylene): Thermoplastic material characterized by elasticity, flexibility and toughness over a wide temperature range; has excellent electrical properties and very low specific gravity; inert to water and most chemicals. USE: Waterproofing and chemical resistant protective coatings; wrapping film as well as molding, extrusion, etc. CONTAINERS: 100 lb. fiber drums.

Propanol (Normal Propyl Alcohol)— $CH_3.CH_2.CH_2OH$: Colorless liquid; vinous odor; B. P. 97.3°C.; M. P. −127°C.; Sp. Gr. 0.804. USE: In the manufacture of intermediates, organic chemicals, lacquers, cosmetics, etc.; as a solvent for dopes, resins, waxes and others. CONTAINERS: 8,000- and 10,000-gal. tank cars; 55 gal. drums.

Propionaldehyde (95%)— $CH_3.CH_2.CHO$: Liquid; B.P. (pure) 48.8°C.; Sp. Gr. 0.8066. USE: In the manufacture of rubber accelerators and synthetic resins; as a disinfectant and a preservative. CONTAINERS: 55 gal. drums.

Propionic Acid— $CH_3.CH_2.COOH$: B. P. 141.4°C.; Sp. Gr. 0.992 (20°/4°C.); F. P. −20.8°C.; USE: As an esterifying agent; in production of cellulose and other propionates; in the manufacture of ester solvents, fruit flavors and perfume bases. CONTAINERS: Special containers (special steel and aluminum 55 gal. drums and tank cars).

Sodium Propionate— CH_3CH_2COONa: White powder. USE: Inhibitor of mold and other microorganisms in foods, tobacco, pharmaceuticals and other products. CONTAINERS: 25-, 75- and 225-lb. fiber drums.

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VINYLS DIVISION

"Elvacet" Polyvinyl Acetates: Colorless, synthetic resins available in solid (bead), solution and emulsion forms. They are thermoplastic, stable, soluble in a number of organic solvents, compatible with many synthetic resins and plasticizers, and adhere well to materials such as paper, cloth, leather, cork, wood, glass, metal and plastics. USE: Principally as an adhesive in solution, emulsion or hot melt form; also as protective coatings, paper coatings, textile and leather finishes. CONTAINERS: BEADS—100 lb. paper bags. EMULSION and SOLUTION—wooden kegs; bbls.

"Elvanol" Polyvinyl Alcohols: Synthetic resins marketed as white powders, most grades of which are water-soluble. Films cast from water solutions are tough, resistant to most organic solvents and impervious to many gases including air. USE: Adhesives; textile sizes and finishes; emulsifying agents; paper sizes and coatings; molded rubberlike products; transparent films and coatings; photosensitive coatings; stencil screens; ceramic binders. CONTAINERS: 125- and 150-lb. fiber drums.

WEST COAST DIVISION

Inquiries originating on the West Coast for all Electrochemicals Department products will be handled by this division.

"Dactin" Dichlorodimethyl Hydantoin (See Page 129).

"Hydro-Cy" Hydrocyanic Acid: A colorless, volatile liquid containing not less than 96% hydrocyanic acid; inflammable; very poisonous; Sp. Gr. approximately 0.700 at 20°C.; B. P. 26.0°C. USE: In the fumigation of citrus trees. CONTAINERS: 80 lb. drums, shipped only in Du Pont trucks within trucking distance of factory.

Potassium Cyanide (See Potassium Cyanide 96% and Potassium Cyanide Special, Page 13-).

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SYNTHETIC RESIN COATED AND IMPREGNATED MATERIALS

P. C. "Fabrikoid" Synthetic Resin Coated Fabrics: Heavy weight grades of special purpose, plastic coated fabrics made by spreader process. The fabrics are processed with synthetic resin for end use applications which require greater resistance to flame, heat, cold, flexing and outdoor exposure than that found in regular standard "Fabrikoid". Available in special fire resistant grades. The following list shows how P. C. "Fabrikoid" is used by other manufacturers:

Automotive: For upholstery and trim, bindings and welts and winter fronts.

Baby Carriages: For upholstery and tops.
Belts
Bookbinding: For loose leaf binders.
Furniture Upholstery
Handbags and Pocketbooks
Luggage

"Fabrilite" Synthetic Resin Coated Fabrics: Light weight grades of special purpose, plastic coated fabrics. The fabrics are processed with synthetic resin. A line of special "Fabrilite" cements are available for fabricating the following list of items made from "Fabrilite" coated fabrics by other manufacturers:

Aprons
Bowl Covers
Card Table Covers
Food Bags
Garment Bags
Garment Linings
Heat Sealable Containers
Household Accessories
Ironing Board Pads
Raincoats
Shower Curtains

Tablecloths: A synthetic resin coated fabric for washable, waterproof tablecloths and shelf covering.

CEMENTS

"Fabrilite" Cements: Made from synthetic resin compositions for fabricating raincoats and other items of merchandise made from "Fabrilite" synthetic resin plastic coated fabrics.

"Fairprene" Industrial Cements: These cements are made from synthetic rubber compounds for adhering various combinations of cured and uncured "Fairprene" sheet stock (without fabric insert), cured and uncured "Fairprene" coated fabrics, cured and uncured rubber, leather, fabrics, paper, metal, wood, glass and porcelain.

CHEMICALLY TREATED FABRICS

Brattice Cloth: An air deflecting, fire resistant product developed to withstand varying atmospheric and service conditions encountered in mines.

CHEMICALLY TREATED RUBBER

"Isolac" Chemically Treated Rubber: A composition of chemically treated rubber for use in compounding rubber soles and heels for shoes.

RUBBER COATED, SYNTHETIC RUBBER COATED, AND SYNTHETIC RESIN COATED MATERIALS

"Cavalite" Rubber Coated Fabrics: A light weight, rubber coated fabric for raincoat and hospital sheeting use.

P. C. "Cavalon" Synthetic Resin Coated Fabrics: A line of heavy weight grades of plastic coated fabrics made by the calendered process. The fabric is processed with synthetic resin and designed for heavy duty upholstery on indoor or outdoor institutional furniture and public seating, and for automobiles, tractors, airplanes, railroads, busses and ships. Manufactured in a wide range of bright colors, embossed effects and finishes. Resistant to flexing, heat and cold. Available in special fire resistant grades.

S. R. "Cavalon" Neoprene Coated Fabrics: A line of coated fabrics designed for high grade, heavy duty upholstery use where maximum resistance to wear and abrasion is desired. Made with neoprene, du Pont's chloroprene. S. R. "Cavalon" has outstanding resistance to vegetable and mineral oils, oxidation in sunlight and perspiration. Manufactured in a wide range of colors, embossed effects and finishes. Recommended for all purpose heavy duty seating, in theatres, trucks, busses, automobiles, hotels, restaurants and institutions. Available in special fire resistant grades.

"Cavaltex" Rubber Coated Fabrics: A high grade line of rubber coated fabrics for raincoat and rough wear garment use. Manufactured in colors, finishes and embossed effects reproducing horse hide leather.

"Everbright Decking" Rubber Coated Fabrics: A line of rubber coated fabrics for deck coverings on station wagons, trucks and busses.

"Fabrilite" Synthetic Resin Coated Fabrics: A line of light weight grades of special purpose, synthetic resin plastic coated fabrics made by the calendered process for the raincoat and garment trade. A special line of "Fabrilite" cements are available for fabricating these items.

"Fairprene" Synthetic Rubber Coated Fabrics: A line of special purpose, synthetic rubber coated fabrics designed for industrial applications in the automotive, aviation, chemical, petroleum and marine construction fields. "Fairprene" coated fabrics have unique oil, chemical, heat, cold, flame, abrasion, flexing and sunlight resistance for dia-

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FINISHES DIVISION

AUTOMOTIVE FINISHES

GENERAL OFFICE: Du Pont Building, Wilmington 98, Delaware

AUTO MANUFACTURERS' SALES OFFICES:

Detroit 2, Michigan, 5-238 General Motors Building
Los Angeles 3, California, 5801 South Broadway
San Francisco 6, California, 235 Second Street

"DUCO" COLOR ADVISORY SERVICE:

Detroit 2, Michigan, 5-238 General Motors Building

PLANTS:

Chicago 14, Illinois, 2100 Elston Avenue
Flint, Michigan
Fort Madison, Iowa
Parlin, New Jersey
Philadelphia 46, Pennsylvania, 3500 Gray's Ferry Road
South San Francisco, California, Post Office Box 608
Toledo 12, Ohio, 1930 Tremainsville Road

PRODUCTS

Cement, Automotive Gasket: Prepared in heavy varnish or pigmented paste form; applicable by brush. USE: A sealing cement for gaskets on automotive motors. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Compounds:

"Duco" Polishing or Rubbing Compound: A polishing material in paste form designed for machine application or hand rubbing. USE: For final polishing of "Duco" enamels to smooth surface and to bring up full gloss. CONTAINERS: 1- and 5-gal. cans.

Shielding Compound: A pigmented semi-paste, having non-drying vehicle. USE: Masking parts of surface while another color is being applied. Used with "Duco" finishes only. CONTAINERS: 1- and 5-gal. cans.

Enamels:

Chassis Black: An air-dry, black, pigmented enamel; applicable by brush or spray with an oil, asphalt, pyroxylin or synthetic type base. USE: On automobile chassis for protection and decoration. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums; tank wagons; tank cars.

"Dulux" Enamels: Baking and air-dry, clear and pigmented enamels based on a synthetic type vehicle; applicable by spray. USE: Finishing of steel and wooden automobile bodies, sheet metal parts, wheels and lamps. CONTAINERS: Pt., qt., ½-, 1- and 5-gal. cans; 50 gal. drums.

Engenamel (See Industrial Finishes, Page 152).

Fender: A black oil or synthetic resin modified asphaltum type enamel applied by dipping and baked at high temperature. USE: Fender and miscellaneous parts finish applied over Rubber First Coat. CONTAINERS: 5 gal. cans; 50 gal. drums; tank wagons; tank cars.

Gas-Tank: A pigmented, black enamel based on an oil type vehicle; applicable by spray or flow coating; air-dried or force-dried at temperatures up to 250°F. USE: Exterior finish of terne plate automobile gasoline tanks. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Motor: Air-dry, pigmented, colored enamels; applicable by spray; available in an oil, synthetic or pyroxylin type base. USE: On automobile motors CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

"Pyralux" Lacquers, Automotive: Air-dry, pigmented, colored finishes having pyroxylin synthetic resin vehicle. USE: On miscellaneous automobile parts as a finish directly over metal or special undercoats. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Radiator Core: An air-dry, black, highly pigmented enamel having high-hiding finish; applicable by spraying or dipping. USE: Finishing automobile radiator cores. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Rubber First Coat: A baking, black, pigmented enamel of the oil-modified, asphaltum type; applicable by dipping. USE: On automobile fenders and miscellaneous sheet metal parts to give satisfactory adhesion between metal and enamel. CONTAINERS: 5 gal. cans; 50 gal. drums; tank wagons; tank cars.

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FINISHES DIVISION: Industrial Finishes

Aluminum Mixing Varnishes: Varnishes to be mixed with aluminum powder or paste for use on wood or metal. CONTAINERS: 1- and 5-gal cans; drums.

Aluminum Paints: Ready mixed and ready-to-mix aluminum paints for use on exterior and interior metal and wood surfaces. CONTAINERS: 1- and 5-gal. cans.

Aluminum Powder and Paste: Various grades for use in varnishes and bronzing liquids. CONTAINERS: ½-, 1-, 2- and 10-lb. cans; 50- and 100-lb. drums.

"Antoxide" Paint: A high grade, metal-protective, rust-inhibitive line of paints. CONTAINERS: 1- and 5-gal. cans.

Asphaltums, Air Drying Types: Black enamels for application to metal. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Baking Japans, Black Gloss: A baking type finish generally used over a Rubber Black First Coat; applied by dipping or spraying. CONTAINERS: 5 gal. cans; drums.

Bronze Powders: In various color shades and various grades of particle size. Applied to surfaces for decorative purposes usually by means of a liquid vehicle. Made by reduction of alloys of copper and zinc to the form of flake-like powder. CONTAINERS: 1-, 5-, 10-, 25-, 50- and 100-lb. cans.

Bronzing Liquids: Of various types including pyroxylin base, oil base and synthetic resin base; used as vehicles for the application of aluminum powder, aluminum paste and bronze powder. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Cable Lacquers: A complete line of lacquers used on various types of fabric covered electric wires and cables in order to increase electrical insulation and to provide protection from effects of oil and grease. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Cements:

Belt Cements: Pyroxylin base cements used in the manufacture of leather belts requiring resistance to the effects of moisture. CONTAINERS: 5 gal. cans; 50 gal. drums.

"Duco" Household Cement (Waterproof Cement): A pyroxylin base cement having a wide utility in the repair of articles made of wood, glass, ivory, leather, pearl or cloth. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

"Pyralin" Pyroxylin Cements: Pyroxylin base cements for use in cementing "Pyraheel" and other plastic facings to wooden heels by manufacturers of women's shoes. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Thermoplastic Cements: Used for cementing or laminating various surfaces, such as metal foils, cloth, glass and sheets of metal that require the application of heat and pressure. These cements are applied to the surfaces and after thoroughly drying are ready for the necessary heat and pressure treatment required. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Thermosetting Cements: Used for cementing or laminating various surfaces, such as plywood, glass, sheets of metal, etc. These cements are applied to the bondable surfaces and after thorough drying are ready for the required heat and pressure which creates a bond not affected by subsequent application of heat. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Special Cements: A wide range of adhesives for an extended field of specialized uses pertaining to the problems of bonding various substances, and involving many modifications of various application and curing methods. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Clear Lacquers: Gloss and flat lacquers for natural wood finishing. USE: For furniture finishing. CONTAINERS: Pt., qt., 1- and 5-gal. cans.

Collodion: Pyroxylin solutions in ether-alcohol solvents. USE: For production of products such as liquid corn plaster, corn cures and waterproof bandages. Stripping types are supplied for use by photoengravers. CONTAINERS: 5 gal. cans; 50 gal. drums.

Colors in Oil: Paste products used to produce special tints in paints, enamels and undercoats; full line of colors. CONTAINERS: ½ pt., qt. and gal. cans.

Dibutyl Phthalate—$C_{16}H_{22}O_4$: Colorless liquid somewhat oily in character used as a plasticizer in nitrocellulose lacquers. CONTAINERS: 5 gal. cans; 50 gal. drums.

Dopes (See Airplane Dopes and Leather Solutions, Pages 150 and 152).

Drawer Coaters: Waxy gum solutions used as finishes for the inside of wooden furniture drawers. CONTAINERS: 5 gal. cans; 50 gal. drums.

Driers: Compounds used to accelerate the oxidation of a finish which contains drying oils. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

"Duco" Furniture Lacquer: Used for finishing wood furniture. CONTAINERS: 5 gal. cans; 50 gal. drums.

"Duco" Furniture Sealers: Similar in composition to clear and flat "Duco" lacquers for finishing of wood furniture. Used on wood furniture as a preliminary coat which is sanded and then followed by a clear or flat "Duco" lacquer topcoat.

"Duco" Pigmented Enamel Finishes: Pyroxylin base enamels furnished in a wide range of colors and types for satisfying the finishing requirements of numerous industries. Applied directly to a surface or over undercoats, depending on the finish needed. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

"No. 7" CHEMICAL SPECIALTIES

GENERAL OFFICE: Du Pont Building, Wilmington 98, Delaware

BRANCH OFFICE: San Francisco 6, California, 235 Second Street

PLANTS:
Flint, Michigan Parlin, New Jersey Toledo, Ohio

PRODUCTS

*INDICATES RESALE *PRODUCTS

"Dissolvo" Grease Solvent: A concentrated grease solvent. Mix with kerosene or light fuel oil for cleaning garage floors, grease pits, motors, tools, etc. CONTAINERS: 1- and 5-gal. drums.

***Dry-Clean Fabric Cleaner:** A non-flammable cleaning fluid, leaves no odor and does not shrink fabrics; recommended for all color-fast garments, gloves, draperies, upholstery and fine fabrics; removes grease, wax, fresh paint, gum, adhesive tape and road tar. CONTAINERS: 8-oz. and gal.

"Duco" Cleaner: A liquid cleaner-polish for all auto finishes. Removes dullness, traffic film and old wax from the finish. Especially recommended for use before applying wax. CONTAINERS: Pt. and gal. cans.

"Duco" Household Cement: A transparent, waterproof adhesive used in the manufacture or repair of articles made of wood, glass, china, metal, ivory, leather, paper or fabrics. CONTAINERS: 1¾ fl. oz. tubes (twelve to display carton).

"Duco" Wax: An easy polishing paste wax for autos and furniture. Produces a brilliant, durable luster and protects the finish from moisture and harmful ultraviolet rays of the sun. CONTAINERS: 7 oz.; 1 lb.

Du Pont Acid and Rust Inhibitor: For reconditioning old ethylene glycol anti-freeze. Neutralizes acid and prevents rust. Can also be used as a summer anti-rust in plain water. CONTAINERS: 5 oz.

Du Pont Anti-Rust: A powdered rust inhibitor which keeps auto cooling systems free from rust, helping to maintain engine efficiency. CONTAINERS: 2 oz.

Du Pont Bug Remover: An efficient cleaning powder for removing bug residue from fenders, windshields, frames, etc. CONTAINERS: 6 oz.

Du Pont Car Wash: A soapless chemical which, when dissolved in water, makes car washing easy. Removes dirt and grease quickly and safely. Makes drying unnecessary. Easy on the hands and car finish. CONTAINERS: 6 lbs.

Du Pont Cellulose Sponge: (See Page 211).

Du Pont Cooling System Cleanser: A powerful, acid type cleanser which cleans badly clogged radiators by actually dissolving rust, scale and grease without injury to hose packings or metal parts. Does not require reverse flushing. CONTAINERS: 1 lb.

Du Pont Cooling System Sealer: Stops leaks in automotive radiators and cooling systems quickly, without clogging the passages. Harmless to hose and metal parts. CONTAINERS: 10 oz. cans.

Du Pont Flint Wax: A soft paste wax that can be applied to the entire car and polished afterward at leisure. Does not "set-up" quickly and stick to the surface. Polishes easily to brilliant, durable luster. Protects car from dirt, moisture and sun. CONTAINERS: Qt.

Du Pont Motor-Mend: For repairing cracked cylinders, engine blocks and water jackets in cars, trucks, busses and tractors. Will not harm hose or metal parts or clog the system. Also recommended as a heavy-duty stop-leak. CONTAINERS: Pt. cans.

Du Pont Paste Cleaner: A paste cleaner for use on autos which are badly weathered and heavily coated with traffic film. Removes chalked pigment, stains, old wax and film without scratching or injuring the finish. CONTAINERS: 11 oz.

Du Pont Refrigerator Polish: Liquid, wax polish for enameled or lacquered refrigerators, ranges, kitchen cabinets, washing machines, mangles, etc. Suitable also for chromium fittings. CONTAINERS: 8 oz.

Du Pont Speedy Wax: A quick working liquid polish which cleans the finish and gives it a wax polish in one operation. Especially suited for new cars and finishes in good condition, but may be used on old finishes from which the chalked pigment has been cleaned. CONTAINERS: Pt. and gal.

Du Pont Tar Remover: A safe solvent for removing tar, road oil and gummy substances from automobile finishes. CONTAINERS: Pt. and gal.

Du Pont Tire Black: A black dressing for brightening automobile tires, rubber mats and running boards. CONTAINERS: Gal.

Du Pont Top and Windshield Sealer: A black, waterproof compound for sealing cracks at auto top mouldings, windshield frames, rear windows, trunk joints, etc. Also suitable for patching holes in the top fabric. CONTAINERS: 3 oz. tubes.

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INDUSTRIAL CHEMICALS

Du Pont Adhesives No. 77 and No. 78: Vinyl resin base white powders; soluble in water at elevated temperatures and with proper agitation. USE: As an adhesive for laminated paperboard. The bond made between flat surfaces of paperboard withstands long exposure to water without ply separation. CONTAINERS: 50 lb. paper bags.

Du Pont Industrial Fungicides—IN-2555 Fungicide, IN-5499 Fungicide, IN-793 Fungicide: Various fungicidal compositions in solvent, emulsion, or dry form, based on water insoluble active ingredients. USE: As bactericides and fungicides for the preservation of paper, textiles, wood, oils, adhesives and paints; for prevention of rancidity in certain non-edible vegetable oils; to prevent mildew in fibers and cloth; to prevent the infection of wood by decay fungi. CONTAINERS: 33-, 350- and 425-lb. drums.

Du Pont Soil Compound NC (See Soil Compound NC, Page 176).

Du Pont Spreader Sticker (See Page 179).

Engraver's Acid (See Nitric Acid—Technical and Engraver's Grade, Page 171).

***Ferric Chloride—Hydrated—Photoengraving, Industrial, Water and Sewage Treatment Grades (Iron Chloride, Iron Perchloride)—$FeCl_3.6H_2O$:** Reddish-brown crystals or crystalline mass; very deliquescent; soluble in water, alcohol, glycerin; M.P. 36° C. USE: In treatment of sewage; as an oxidizing agent, and etchant; in photoengraving and rotogravure work; as a mordant for dyes; in the manufacture of iron salts, dyes and intermediates, dry colors; in the pickling of iron and steel; as a coloring agent in ceramics and glass; for chlorinating silver and copper ores. CONTAINERS: Bbls. (300- and 500-lbs., net); drums (100 lbs., net).

***Ferric Chloride Solution—Photoengraving, Water and Sewage Treatment Grades (Iron Chloride, Iron Perchloride)—37 to 47% $FeCl_3$ In Water Solution:** Reddish-brown corrosive liquid; miscible with water and alcohol; slightly soluble in ether; free of excess muriatic acid. USE: As an etchant in photoengraving and rotogravure work; in metallography; as an oxidizing medium; as a dyestuff mordant; in water and sewage treatment. CONTAINERS: Tank cars; carboys (140- to 150-lbs., net).

***Ferrous Sulfate (Copperas, Green Vitriol, Iron Sulfate)—$FeSO_4.7H_2O$:** Bluish-green crystals, granular or powdered material; soluble in water; insoluble in alcohol; Sp. Gr. 1.898; M.P. 64° C. USE: In the manufacture of iron salts, pigments, dry colors, indigo dyestuffs; in boiler compounds for removal of silica; as a mordant in dyeing and printing textiles; for purification processes in municipal gas, sewage, and water plants; in process engraving and lithography; in tanning; in iron electroplating processes; in the manufacture of stock powders. CONTAINERS: Bulk; bbls. (350 lbs., net); 100- and 200-lb. bags.

Fire Retardants CM, T, 3-WG: Fine, white, granular compositions based on inorganic salts and selected addition agents; soluble in water; insoluble in the common dry cleaning solvents. USE: In the fire-retardant treatment of fabrics, paper, paper products, and other cellulosic materials. Designed to give a maximum degree of fire-retardant protection with a minimum effect on the original physical characteristics of the treated material. CONTAINERS: 300- and 350-lb. bbls.; 50- and 100-lb. drums.

***Fluorspar—(Calcium Fluoride)—CaF_2:** A white powder containing 97.39% calcium fluoride; insoluble in water; soluble in concentrated acids; M.P. approximately 1650° F. USE: In the manufacture of hydrofluoric acid and fluorine compounds, cements, ceramics, stone and enameled ware; as a metallurgical flux; as an abrasive; in wood preservation; in glass etching compositions. CONTAINERS: Bags (221 lbs., net).

Flux, Galvanizing (See Zinc Ammonium Chloride, Page 177, and Ammonium Chlorides, Page 163).

Flux, Soldering—Crystal "Eureka"—Zinc Chloride +Ammonium Chloride: White crystalline powder; soluble in water. USE: As a flux in soft soldering operations and preparation of liquid soldering fluxes. CONTAINERS: 700 lb. drums; 10- and 50-lb. pails.

Flux, Soldering—"Kleanrol" Soldering Flux—Zinc Chloride+Ammonium Chloride: White, crystalline powder. USE: As a solder blanket flux in automatic soldering of sideseams in the manufacture of tinned containers. CONTAINERS: 600 lb. drums; 10- and 50-lb. pails.

Fluxes, Soldering Liquid—Triple "Eureka" and "Eureka": Clear, colorless water solutions, based on zinc chloride and containing other ingredients. Various gravities and compositions. USE: General soft soldering and solder and lead-coating fluxes for use in the automotive, can, refrigeration, wire and other industries. CONTAINERS: 125- to 150-lb. carboys; 610- to 700-lb. drums.

Fluxes, Tinning—Standard and "High Speed": Clear, colorless water solution of zinc chloride and ammonium chloride; Sp. Gr. 1.526; F.P. below −50° F. USE: As fluxing solutions in the manufacture of tin plate, terne plate, tin strips, dairy equipment, refrigerator trays, automobile radiators, wire goods, etc. CONTAINERS: 150- to 175-lb. carboys; 670- to 745-lb. drums.

Fly Spray Base IN-930 (Isobutyl Undecylenamide): Yellow to yellowish-brown crystalline material, or straw-colored liquid; insoluble in water; soluble in ether, acetone, alcohol, carbon tetrachloride, toluene, and kerosene; M.P. approximately 25° C.; Sp. Gr. approximately 0.87. USE: With pyrethrum in the manufacture of insecticides to increase their insecticidal efficiency. Replaces a substantial portion of pyrethrins previously required for an active base. CONTAINERS: 55 gal. drums (380 lbs., net).

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INDUSTRIAL CHEMICALS

insoluble in alcohol and ether. USE: In the manufacture of boiler and water-softening compounds, fertilizers, evaporated milk and other phosphates; as an emulsifier in the manufacture of processed cheese; as a phosphorous supplement in mineral animal feeds; in the preparation of casein paper coatings, fireproofing compositions; as a discharge in pottery and porcelain glazes. CONTAINERS: 100 lb. paper bags; 303- to 350-lb. bbls.

Sodium Phosphate—Monobasic—Crystal (Monosodium Orthophosphate, Sodium Acid Phosphate, Sodium Biphosphate)—$NaH_2PO_4.H_2O$ **(Monohydrate)**: Colorless, translucent crystals. ANHYDROUS—NaH_2PO_4: White, amorphous powder. Both compounds soluble in water; insoluble in alcohol. Aqueous solutions possess an acid reaction. USE: As a water softener for treatment of boiler feed waters; as an ingredient of baking powders; as a cattle food supplement. CONTAINERS: 100 lb. paper bags.

Sodium Phosphate—Tribasic (Trisodium Orthophosphate, Tertiary or Trisodium Phosphate)—$Na_3PO_4.12H_2O$ **(Dodecahydrate)**: Colorless crystals, small spheroidal pellets or thin flakes; soluble in water; M.P. approximately 73° C.; aqueous solution alkaline in reaction. MONOHYDRATE—$Na_3PO_4.H_2O$: White, amorphous powder or granular material; soluble in water. USE: As a water softener; in the manufacture of phosphates, soaps, detergents, paint cleaners, boiler compounds, scouring powders, household cleaners; as an alkali builder for laundries; for cleaning textiles, glass, metals, dairy and food-processing equipment; for neutralizing acid residues on pickled steel; in degumming and scouring textiles, and washing wool. CONTAINERS: 100 lb. paper bags; 200- to 325-lb. bbls.

Sodium Polysulfide Solution—Na_2S_x: In aqueous solution, containing the equivalent of approximately 18.5% Na_2S and 22.9% polysulfide S. USE: In the manufacture of sulfur colors and dyes, pharmaceuticals, insecticides; in the production of rubber substitutes, and petroleum additives; in soaking of hides. CONTAINERS: Drums.

Sodium Pyrophosphate (Tetrasodium Pyrophosphate)—$Na_4P_2O_7$: White, granular, powdered or amorphous material; soluble in water; insoluble in alcohol; aqueous solution possesses an alkaline reaction, water-softening and a dispersing action on hard-water soaps, clay and other inerts. USE: In the manufacture of iron and other pyrophosphates; as a water softener, soap builder, and as an ingredient in detergents for cleaning fabrics, glass, metals, etc.; in electroplating solutions; as an agent for neutralizing freshly pickled steel; in thinning clay slips for paper coating, de-inking magazine paper stock for reuse; as an assistant in boiling off and bleaching cotton and rayon; in wool scouring; as a general dispersing agent. CONTAINERS: 100 lb. paper bags; 325 lb. bbls.

Sodium Silicate—Anhydrous—Glass and Powder: Na_2O: 3.25 SiO_2 and Na_2O: 2.0 SiO_2; clear, colorless to slightly greenish, glassy lumps or white powder; soluble in water at elevated temperatures and pressures. USE: In the manufacture of sodium silicate solutions; as a metallurgical flux; in enamel frits; in coated welding rods and cement. CONTAINERS: GLASS—Bulk; 400 lb. bbls.; 400 lb. drums; 100- and 200-lb. bags. POWDER—450- and 500-lb. drums.

Sodium Silicate Solution (Liquid Silicate of Soda, Water Glass): Clear or slightly cloudy liquids of various SiO_2:Na_2O ratios; Sp. Gr. from 34°–50° Bé. USE: In the manufacture of soap, silica gel, artificial zeolites, magnesium and calcium silicates, refractory and acidproof cements, cement-asbestos products, welding rod coatings, detergents, abrasive wheels, veneer products, paint and varnish removers, boiler compounds; as a binder in welding rod coatings; as an adhesive in manufacture of solid fiber and corrugated paper board; in production of synthetic clay catalysts for petroleum cracking; for sizing wood and fabrics; as a stabilizer in peroxide bleaching of cotton and rayons; for silk weighting; as a resist in dyeing and printing fabrics; in metallurgy as hot-top collars for pouring molten metals and for sealing porous casting; as an inorganic carrier in fire-resistant and corrosion-proof paints. CONTAINERS: Tank cars; 600- to 750-lb. drums; 1- and 5-gal. containers.

Sodium Silicofluoride (Sodium Fluosilicate)—Na_2SiF_6: White, granular powder; moderately soluble in water; insoluble in alcohol; aqueous solutions possess an acid reaction. USE: As an opacifier in the manufacture of glass and enamels; as a flux in vitreous enamels, and in remelting secondary aluminum; in the manufacture of laundry sours, artificial marble and acidproof cement; in the electrodeposition of tin and lead; in insecticides and rodent poisons. CONTAINERS: 425- to 450-lb. bbls.; 100-lb. fiber drums.

***Sodium Sulfate—Anhydrous (Glauber's Salt, Anhydrous; Super Sulfate of Soda)**—Na_2SO_4: White crystals; soluble in water; M.P. 884° C. USE: In the manufacture of glass; for standardizing dyestuffs and dyeing textiles; for boiler feed water treatment. CONTAINERS: 500 lb. bbls.; 150 lb. bags.

Sodium Sulfate—Decahydrate (See Glauber's Salt, Page 168).

Sodium Sulfate—Technical (See Salt Cake, Page 172).

Sodium Sulfide—Crystal (Sodium Sulfuret)—$Na_2S.9H_2O$: Deliquescent, yellow to brown crystals; soluble in water; slightly soluble in alcohol; decomposed by acids. CONCENTRATED—60% Na_2S: Deliquescent, yellow to brown solid or thick flakes. Aqueous solution strongly alkaline in reaction. USE: In the manufacture of intermediates, sulfur dyes, paper pulp, special soaps, insecticides, sheep dips; as a depilatory in tanning; in textile dyeing and printing; denitrating rayon; the beneficiation of

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ANODES

refrigerant in centrifugal compressors; as refrigeration brine; as a solvent for animal and vegetable oil extraction; for dewaxing of lubricating oils; and for synthetic fibers such as cellulose acetate. CONTAINERS: 55 gal. drums; 5 gal. cans; tank cars.

Parting Liquid No. 168: A colorless, non-flammable liquid; B.P. 160.5°C. = 320.9°F.; Sp. Gr. 1.681. Vapors relatively toxic. USE: For coal beneficiation. CONTAINERS: 55 gal. drums; 5 gal. cans.

Pentachlorethane, C_2HCl_5: A colorless, non-flammable liquid; B.P. 160.5°C. = 320.9°F.; Sp. Gr. 1.681. Vapors relatively toxic. USE: In chemical synthesis and as a solvent. CONTAINERS: 55 gal. drums; 5 gal. cans; tank cars.

Tetrachlorethane (Acetylene Tetrachloride, 1,1,2, 2-Tetrachloroethane)—$C_2H_2Cl_4$: A colorless, non-flammable liquid chlorinated hydrocarbon, unstable in the presence of moisture; vapors relatively toxic; B.P. 146.3°C. = 295.3°F.; Sp. Gr. 1.596. USE: As a solvent in special preparations; as a weed killer; in chemical synthesis. CONTAINERS: 55 gal. drums; 5 gal. cans; tank cars.

ELECTROPLATING DIVISION

***Anode Baskets:** Helical steel wire coil containers or holders for 2 in. diameter ball anodes. USE: In cadmium or zinc plating. CONTAINERS: Wooden crates.

Anodes:

Brass (See below).
Cadmium (See this page).
Copper (See High Speed Copper Anodes, Page 131).
Copper Ball (See this page).
"Duozinc" Zinc-Mercury (See Page 131).
Du Pont Zinc Ball (See Page 131).
"Durobrite" Zinc (See Page 131).
High Grade Zinc (See Page 131).
High Speed Copper (See Page 131).
Lead (See Page 131).
Nickel (See Page 131).
"Pur-o-Tin" Tin (See Page 132).
"Purozinc" Zinc (See Page 132).
Tin (See "Pur-o-Tin" Anodes, Page 132).
"Zin-O-Lyte" Zinc (See Page 132).

Brass Anodes: Contain 80% Cu, 20% Zn; 70% Cu, 30% Zn. USE: To maintain metal content in electroplating solutions. CONTAINERS: Packed as required.

"Cadalyte" Anti-Pit Agent: Specially prepared mixture for use with "Cadalyte" Cadmium Plating Salts. USE: To prevent pitting in cadmium plated deposits. CONTAINERS: Packed as required.

"Cadalyte" Bright Dip: A concentrated, clear liquid which is diluted with fifteen parts water for use. USE: To produce brighter cadmium deposits by "bright dipping"; to add a tarnish-resisting film on the surface of cadmium plated products. CONTAINERS: Carboys; 5 lb. bottles.

"Cadalyte" Brightener: A special mixture added to cadmium or "Cadalyte" cadmium plating baths to produce bright deposits. CONTAINERS: Pails and drums (5-, 25- and 50-lbs., net).

"Cadalyte" Cadmium Plating Salts: Yellowish-brown to white, coarse powder consisting of a mixture of sodium cyanide, cadmium oxide and brighteners. USE: To prepare a very efficient cadmium plating bath, which deposits cadmium in a very bright, ductile and adherent form on all types of iron, steel and many other products to prevent rusting and corrosion. CONTAINERS: Drums (50 lbs., net).

"Cadalyte" Maintenance Compound: A prepared mixture for maintaining the correct ratio of cyanide and brightener content of cadmium or "Cadalyte" cadmium plating baths. CONTAINERS: Drums (100 lbs., net).

Cadmium Anodes: Bar or ball form. USE: As anodes for supplying cadmium metal to "Cadalyte" and other cadmium plating baths. CONTAINERS: Wooden boxes.

***Cadmium Oxide—CdO:** Brown, amorphous powder. USE: To increase cadmium content in cadmium plating baths. CONTAINERS: 50 lb. packages.

Cadmium Sponge: Contains approximately 84% Cd. USE: As purification agent for cadmium or "Cadalyte" cadmium plating baths. CONTAINERS: Drums and steel pails (10- and 50-lbs., net).

***Carbonate Remover:** A special mixture of chemicals including calcium sulfate. USE: To remove carbonates from cyanide plating solutions. CONTAINERS: 100 lb. bags.

Copper Anodes (See High Speed Copper Anodes, Page 131).

***Copper Ball Anodes:** Ball form. USE: As anodes for supplying copper metal to copper plating baths.

Copper Cyanide (Cuprous Cyanide)—CuCN: A creamy-white powder; insoluble in water; soluble in sodium and potassium cyanide; copper content min. 70%; insoluble max. 0.20%. USE: In electroplating processes; in insecticide compounds and as an anti-fouling agent in marine paints. CONTAINERS: Drums (100 lbs., net); wooden kegs (25- and 50-lbs., net).

"Cyanobrite" Mercury Salt: A red powdered mercury salt; soluble in acids and alkalies. USE: As the mercury-carrying ingredient for zinc plating solutions. CONTAINERS: 10-, 25-, 50- and 100-lb. kegs; 1 lb. cartons (5 to a case).

"Dacolyte" Addition Agent: Assists in producing smooth copper deposits free from nodules or trees. USE: In acid copper plating solutions for heavy deposits only. CONTAINERS: 5-, 10-, 25-, and 50-lb. drums.

"Darsil" Oxidizing Agent: A grayish powder; insoluble in water; soluble in concentrated hydrochloric acid solution. USE: For oxidizing (Black finish) on silver, gold and brass. CONTAINERS: 1-, 4- and 10-oz. bottles.

NOTE: Vertical lines drawn to set off Anode descriptions.

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ELECTROPLATING DIVISION

"Duozinc" Zinc-Mercury Alloy Anodes: A zinc-mercury alloy containing zinc and small percentages of mercury; furnished in bar form only, in standard designs, with ordinary flat steel spines or barbed steel spines. USE: In zinc plating. CONTAINERS: Loose or in wooden boxes.

Du Pont Zinc Ball Anodes: Ball type anodes made of High Grade Zinc. USE: As anodes in electroplating baths to supply zinc metal for alkaline or acid zinc solutions. CONTAINERS: Boxes (100- and 200-lbs., net).

"Durobrite" Zinc Anodes: High Grade Zinc with small percentage of magnesium; furnished in bar and ball form. USE: In zinc plating. CONTAINERS: Loose or in wooden boxes.

Gold Hydrate—AuO(OH): A yellow powder; soluble in sodium or potassium cyanide solutions; insoluble in water; gold content 84.5%. USE: In gold plating. CONTAINERS: 1- and 10-oz. bottles.

***Halogen Tin Addition Agents:** Used in conjunction with the Halogen Tin plating process. Furnished in several types which are effective as brightening and basic deposit control agents. USE: In Halogen Tin plating. CONTAINERS: Miscellaneous.

Halogen Tin Plating Process: An acid tin plating process, using bivalent tin and tin anodes. Developed for continuous tin plating on steel strip or wire. Bath permits high current densities and rapid plating.

High Grade Zinc Anodes: High Grade Zinc without alloying metals. Standard bar forms. USE: In zinc plating. CONTAINERS: Loose or in wooden boxes.

***High Speed Copper Anode Hangers:** Standard sizes. USE: To support High Speed Copper anodes. CONTAINERS: Packed as required.

High Speed Copper Anodes: Furnished in standard flat designs. USE: With High Speed Copper Process and other types of copper plating processes. CONTAINERS: Wooden boxes; bbls.

High Speed Copper Anti-Pit Agent (See "RH" 556, Page 132).

High Speed Copper Plating Addition Agent (See "RH" 774, Page 132).

High Speed Copper Plating Process: A cyanide process for depositing smooth, bright, heavy coatings of copper. Two formulations are available, one based on sodium cyanide and the other on potassium cyanide. Advantages of the process: no pitting; no hydrogen and noxious fumes; simple control; can be installed in usual plating equipment. USE: On steel, die castings, wire, and other parts where smooth, adherent coatings of heavy, bright copper are required.

High Speed Copper Plating Salts—Potassium Formulation (See "RH" 661, Page 132).

High Speed Copper Plating Salts—Sodium Formulation (See "RH" 553, Page 132).

Lead Anodes: Bar form. USE: For lead plating. CONTAINERS: Loose or in wooden boxes.

Moly Black Plating Process: For plating black finishes of a molybdenum-nickel complex from an acid solution. The bath has abnormally high throwing power. Undercoats of cadmium or zinc are recommended.

Moly Black Salt A: A complete make-up salt for the Moly Black Plating Process. USE: To produce lustrous black finishes on some types of die castings and aluminum alloys. CONTAINERS: 10-, 25-, 50- and 100-lb. drums.

Moly Black Salt B: A mixture containing necessary ingredients to replenish the Moly Black Plating bath. USE: For maintenance of the Moly Black plating process. CONTAINERS: 10-, 25-, 50-, and 100-lb. drums.

***Nickel Anodes:** In elliptic cross section: rolled depolarized, rolled carbon, and cast carbon. USE: For nickel plating. CONTAINERS: Packed as required.

***Nickel Carbonate—Approximately $NiCO_3.4H_2O$:** Bluish-green crystals; soluble in dilute mineral acids; insoluble in water. USE: In the manufacture of soaps and nickel salts; in ceramic colors and glazes; in electroplating; for coloring metals; as a catalyzer for hardening fats. CONTAINERS: Bbls. (225 lbs., net).

***Nickel Chloride—$NiCl_2.6H_2O$:** Green, deliquescent crystals; soluble in water and ammonium hydroxide; Technical Grade. USE: As an addition agent in nickel plating solutions. It increases nickel density, is an excellent conducting agent, causes maximum anode corrosion and helps to control pitting. CONTAINERS: Kegs (100 lbs., net); bbls. (275 lbs., net).

***Nickel Salts, Double (Nickel Ammonium Sulfate) —$NiSO_4(NH_4)_2SO_4.6H_2O$:** Large, dark bluish-green crystals; soluble in water and ammonium sulfate solution; Technical Grade. USE: As metal and conducting salts for nickel plating solutions; in photo-engraving; in oil and tallow refining. CONTAINERS: Wooden bbls. (425 lbs., net).

***Nickel Salts, Single (Nickel Sulfate)—$NiSO_4.6H_2O$ + $NiSO_4.7H_2O$:** Large, green crystals, efflorescent in air; soluble in alcohol and water; Technical Grade. USE: As metal and conducting salts for nickel plating solutions; in hardening oils (hydrogenation process); in the manufacture of nickel ammonium sulfate, paints, varnishes and ceramics. CONTAINERS: Wooden bbls. (425 lbs., net).

***Polysulfide:** A sodium sulfuret similar to Liver of Sulfur, having a sodium base instead of a potash base. USE: For coloration of copper, copper and zinc alloys, and similar silver metal-plated products. CONTAINERS: 10 lb. tins (six to a case).

Potassium Cyanide (See Page 134).

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Potassium Gold Cyanides, 41% Gold and 67% Gold —$KAu(CN)_2$: A white, crystalline powder; soluble in water. USE: For gold plating radar parts, jewelry, church ornaments, lamps and silverware. CONTAINERS: Bottles (1- and 10-ozs., net).

***"Pur-o-Tin" Tin Anodes:** Metallic tin; bar or ball form. USE: For tin plating. CONTAINERS: Boxed, or wire-strapped.

"Purozinc" Zinc Anodes: Intermediate Grade Zinc; supplied in bar form only. USE: For zinc plating. CONTAINERS: Loose or in wooden boxes.

"Rack-Lac" Dip Coating: An insulating material for the protection of plating racks. USE: On racks in all types of plating solutions, chromic acid, and acid and alkaline cleaners. CONTAINERS: 5½ gal. pails.

"Rack-Lac" Rack Tape: An insulating tape for the protection of plating racks. USE: In all types of plating solutions, cleaners, acid and alkaline type plating solutions, and in chromic acid. CONTAINERS: Paper Boxes (1 lb., net).

"RH" 309 Brightener: A brightener which is used in conjunction with the "Durobrite" Zinc Plating Process. USE: To improve covering power by extending the bright plating range to low current density areas. CONTAINERS: 1 gal. glass jugs; Bbls. (5-, 10-, 20- and 52-gals., net).

"RH" 556 High Speed Copper Anti-Pit Agent: USE: With High Speed Copper plating salts to prevent pitting. CONTAINERS: 115 lb. carboys; gal. bottles.

"RH" 553 High Speed Copper Plating Salts—Sodium Formulation: For the production of smooth, bright, heavy coatings of copper. Bath is based on sodium cyanide. USE: On steel, die castings, wire and other parts where smooth, adherent coatings of heavy bright copper are required. CONTAINERS: 100 lb. drums.

"RH" 661 High Speed Copper Plating Salts—Potassium Formulation: For the production of smooth, bright, heavy coatings of copper; bath is based on potassium cyanide. USE: On steel, die castings, wire and other parts where smooth, adherent coatings of heavy, bright copper are required. CONTAINERS: 100 lb. drums.

"RH" 774 Addition Agent: USE: As anti-pitting agent for High Speed Copper plating; as anti-fume agent for "Durobrite" zinc plating. CONTAINERS: 115 lb. carboys; 1 gal. bottles.

"RH" 1032 and "RH" 1085 Addition Agents: USE: As anti-pitting agents for High Speed Copper Plating. CONTAINERS: 115 lb. carboys; 1 gal. bottles.

Silver Cyanide—AgCN: White powder; soluble in sodium cyanide or potassium cyanide solutions; silver content min. 80%. USE: For aircraft, Diesel and other heavy-duty bearings; for electrical contacts; for silver plating silverware, jewelry, lamps and reflectors. CONTAINERS: 16 oz. mailing tubes; 80-, 100-, 500-, 1000- and 1400-oz. fiber containers.

Sodium Cyanide (See Page 135).

Sodium Gold Cyanide 46%—$NaAu(CN)_2$: A yellow powder; soluble in water; contains 46% gold min. USE: For gold plating radar and electrical parts, band instruments, razor holders, lamps, clocks, jewelry and tableware. CONTAINERS: 1- and 10-oz. bottles.

***Sodium Stannate—$Na_2SnO_3.3H_2O$:** A white or light brown, crystalline powder; soluble in water; tin content min. 40%. USE: For electrotinning ferrous and non-ferrous articles, such as refrigerating coils, food containers, radio and automotive parts; for preparing slats in mercerizing of cotton; for delustering rayon; and in cross-dyeing of rayon and cotton fabrics. CONTAINERS: Drums (100 and 300 lbs., net).

Sulfamate Lead Addition Agents: Compounds which facilitate the production of smooth, non-porous lead deposits, eliminate treeing, and in special applications increase the covering power. USE: In conjunction with Sulfamate Lead Salts for lead plating. CONTAINERS: 10-, 25-, 50- and 100-lb. fiber containers.

Sulfamate Lead Salts: Specially prepared salts for lead plating with the Sulfamate Lead Process. Lead is plated rapidly and economically with a relatively pore-free deposit. USE: To prepare and maintain Sulfamate Lead plating solutions. CONTAINERS: 10-, 30-, and 65-lb. drums.

Tin Anodes (See "Pur-o-Tin" Tin Anodes, this page).

Zinc Anodes:

"Duozinc" Zinc-Mercury Anodes (See Page 131).
"Durobrite" Zinc Anodes (See Page 131).
Du Pont Zinc Ball Anodes (See Page 131).
High Grade Zinc Anodes (See Page 131).
"Purozinc" Zinc Anodes (See this page).
"Zin-O-Lyte" Zinc Anodes (See this page).

Zinc Cyanide—$Zn(CN)_2$: A white powder; soluble in sodium and potassium cyanide solutions. USE: In zinc and brass plating solutions. CONTAINERS: 25- and 50-lb. kegs; 100 lb. drums.

Zinc Dust—Zn: Double A grade. USE: For the purification of zinc cyanide plating solutions. CONTAINERS: Pails (5-, 10-, 25-, 50- and 100-lbs., net).

"Zin-O-Lyte" Addition Agent "O": An adjunct to "Zin-O-Lyte" Brightener. USE: In "Zin-O-Lyte" zinc plating solutions.

"Zin-O-Lyte" Brightener: Crystalline powder. USE: For producing bright deposits in "Zin-O-Lyte" zinc plating baths. CONTAINERS: Drums (5-, 10-, 25-, 50-, and 100-lbs., net).

"Zin-O-Lyte" Zinc Anodes: High Grade Zinc with small percentage of magnesium. Bar and ball forms. USE: To supply metal in "Zin-O-Lyte" plating solutions. CONTAINERS: Loose or in wooden boxes.

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ores, and precipitating heavy metals; for coloring metal surfaces; in production of petroleum additives. CONTAINERS: 380- to 605-lb. drums; 400 lb. bbls.

*Sodium Sulfite — Anhydrous — Na_2SO_3: Tan or slightly pink crystalline powder; soluble in water, slightly soluble in alcohol; aqueous solution possesses a reducing action. USE: As a bleach and general reducing agent; in the manufacture of dyestuffs and intermediates, photographic developing and fixing baths; as an antichlor in treating rubber latex and deoxygenating boiler feed water; as an antiseptic and preservative. CONTAINERS: Bbls. (400 lbs., net); drums (100 lbs., net); paper bags (100 lbs., net).

Sodium Sulfite—Crystal—$Na_2SO_3.7H_2O$: White efflorescent crystals; soluble in water; slightly soluble in alcohol; loses water at 150° C. and decomposes with further heating. USE: In the manufacture of dyestuffs and intermediates, explosives; as a reducing agent in dyeing of textiles and as a bleaching agent for straw, wool and silk; as an antichlor; in steel treatment; in deoxygenating boiler feed water; as a sterilizing agent and preservative; as a source of sulfur dioxide; in photographical developers. CONTAINERS: 100- and 200-lb. bags; 325 lb. bbls.

Sodium Thiosulfate (See Sodium Hyposulfite, Page 174).

Sodium-Zinc Alloy—98% Zn. and 2% Na: Homogeneous alloy of zinc and sodium. Made up in 11 lb. pigs, suitably notched so as to be easily broken. USE: As deoxidizer and homogenizer for non-ferrous metals in which zinc is the principal constituent. CONTAINERS: Wooden boxes.

Soil Compound NC (Chloronitrotoluene) — $C_7H_6NO_2Cl$: Crystalline solid; insoluble in water; soluble in alcohol, ether, carbon tetrachloride and petroleum oils. USE: As a soil poison in trench type termite barriers. CONTAINERS: 55 gal. drums (550 lbs., net); 110 gal. drums (1100 lbs., net); 5 gal. pails (50 lbs., net).

*Stannic Chloride (Tin Tetrachloride, Anhydrous) —$SnCl_4$: Colorless, fuming liquid; F.P. approximately −30° C.; B.P. approximately 114° C.; soluble in cold water and alcohol; decomposed by hot water. USE: In the manufacture of color lakes, dyes, pharmaceuticals; as a mordant in dyeing and printing textiles; as a color brightener for wool; for weighting silk. CONTAINERS: 100 lb. drums; 140 lb. carboys.

Stannous Chloride—Crystal (Muriate of Tin, Tin Crystals, Tin Bichloride)—$SnCl_2.2H_2O$: White crystals; soluble in water, alkalies, tartaric acid and alcohol; M.P. approximately 38° C. USE: In the manufacture of color lakes, ceramic glazes, metallic coatings on cloth and paper; as a reducing agent and mordant in dyeing and printing textiles; in tin galvanizing and electroplating; in the production of dry colors and pigments; as an antichlor. CONTAINERS: 625 lb. bbls.; 100 lb. kegs.

*Stannous Sulfate (Tin Sulfate)—$SnSO_4$: White to yellowish crystalline powder; soluble in water, alcohol, and acids; M.P. approximately 508° C.; decomposes upon heating to elevated temperatures. USE: As a mordant in dyeing textiles. CONTAINERS: 400 lb. bbls.

Strontium Nitrate—$Sr(NO_3)_2$: White, crystalline powder; soluble in water; slightly soluble in alcohol; Sp. Gr. 2.98; purity approximately 97%; flame tests carmine-red. USE: In the manufacture of railroad and highway flares, marine signals, fireworks and pyrotechnics. CONTAINERS: 650 lb. bbls.

Sulfamic Acid—HSO_3NH_2: White crystalline solid; soluble in water; slightly soluble in alcohol, acetone, and ether; aqueous solutions possess a strongly acid reaction; M.P. 205° C.; Sp. Gr. approximately 2.126; all common salts water-soluble. USE: In the manufacture of electroplating salts; in diazotizing processes for manufacture of dyestuffs; for leather tanning; for cleaning and pickling metals; in the manufacture of inorganic and organic sulfamates, intermediates, and dry colors; as an acidimetric standard in analytical work and for solution denitriting. CONTAINERS: 400 lb. bbls.; 50- and 100-lb. fiber drums.

*Sulfur—Commercial and Refined (Light and Heavy Flour, Flowers of Sulfur, Sublimed, Dusting, Roll and Rubbermakers, Smoke and Superfine Sulfur, Brimstone)—S: All Grades. Pale yellow, solid, amorphous, crystalline sticks, or powder of varying degrees of fineness; insoluble in water; soluble in sodium sulfide, carbon disulfide and sulfur chloride. USE: In the manufacture of rubber, paper, sulfuric acid, cements, explosives, fertilizers, insecticides, fungicides, fumigants, pharmaceuticals, glass, paints, matches, leather, pyrotechnics, steel, soaps and for many other materials. CONTAINERS: FLOUR—240- to 300-lb. bbls.; 50- and 100-lb. bags. FLOWERS—155- and 200-lb. bbls.; 100 lb. bags. DUSTING—50- and 100-lb. bags. ROLL—400 lb. bbls.; 150 lb. bags. RUBBERMAKERS—220 lb. bbls.; 50 lb. bags. LUMP—500 lb. bbls.; 200 lb. bags. VIRGIN ROCK—400- and 600-lb. bbls.

*Sulfur Chloride, Mono—Technical (Sulfur Subchloride)—S_2Cl_2 or SCl: Clear, yellow, oily, fuming liquid with penetrating odor; decomposed by water; soluble in numerous organic solvents; Sp. Gr. approximately 1.70; F.P. −80° C.; B.P. 138° C. USE: In the manufacture of rubber cement and dipped goods, intermediates, and organic chemicals, varnishes, cellulose esters and insecticides; as a sulfur solvent in vulcanizing rubber; in dyeing and finishing of textiles; for purifying sugar juices; in recovering gold from its ores. CONTAINERS: Drums (120-, 700- and 750-lbs., net).

Sulfuric Acid—C.P. Reagent—95.5 to 96% H_2SO_4 In Water Solution: Clear, colorless, heavy, oily liquid; miscible in water with evolution of heat; Sp. Gr. 1.84; F.P. −15° C. USE: As a reagent in chemical analysis or where sulfuric acid of an espe-

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cially high purity is required. CONTAINERS: 195 lb. glass carboys; 9 lb. (5 pint) bottles (ten in a case); 1 lb. bottles (thirty-two in a case).

Sulfuric Acid, Fuming (See Oleum, Page 171).

Sulfuric Acid, Inhibited (See "Duclean" No. 1 Inhibited Sulfuric Acid, Page 166).

Sulfuric Acid—Technical (Oil of Vitriol)—H_2SO_4: Clear, colorless to light pink, heavy, oily, corrosive liquid; soluble in water in all proportions with evolution of heat.

STRENGTH	$\%H_2SO_4$
60° Bé.	77.67
66° Bé.	93.20

USE: In the manufacture of superphosphate fertilizers, ammonium sulfate from by-product coke ovens, mineral colors, explosives, inorganic acids, phosphates, alum, intermediates, dyestuffs and other organic chemicals; in the refining of petroleum and manufacturing of sulfonated oils; for pickling iron and steel and bright dipping non-ferrous metals; in the pickling of hides and chrome tanning of leather; in sizing and parchmentizing paper; in the manufacture of synthetic rubber latex, rayon, synthetic detergents, sugar and starch; as a general dehydrating agent; assistant in dyeing, bleaching, carbonizing, mercerizing textiles; production of bleaching clays; animal and vegetable oil refining. CONTAINERS: Tank cars; 715- to 1750-lb. steel drums; 180- to 200-lb. carboys.

Tanning Agent G-942: A pale brown liquid containing high molecular weight carboxylic acids; weight, approximately 8.9 lbs. per gal.; F.P. 29° F. USE: In tanning light weight skins for the production of white, colored and specialty leathers. Possesses a high skin-plumping ability. CONTAINERS: Bbls. (425 lbs., net).

Tetrasodium Pyrophosphate (See Sodium Pyrophosphate, Page 175).

Tin Crystals (See Stannous Chloride, Page 176).

Trisodium Phosphate—T.S.P. (See Sodium Phosphate—Tribasic, Page 175).

Weed Killer (See "Ammate" Weed Killer, Page 178).

***Whiting (Calcium Carbonate)—$CaCO_3$:** A natural white, amorphous powder; insoluble in water; soluble in acids; Sp. Gr. approximately 2.71. USE: As an extender for pigments; in the manufacture of soaps, glass, detergents, metal polishes, oil cloth and linoleum; as a pigment and filler in rubber, paper, paints and varnishes. CONTAINERS: 50 lb. bags.

Wood Preservatives (See "CZC" Chromated Zinc Chloride, Page 166, and Zinc Chloride, this page. Also see Du Pont Industrial Fungicides, Page 167).

Zinc Ammonium Chloride—$ZnCl_2.3NH_4Cl$: White to yellowish granular crystals; soluble in water. USE: As a fluxing salt for hot dip galvanising of pipe, tubes, tanks, malleable iron fittings, wire, etc.; as a flux in metal soldering and tinning; in electric batteries; in the manufacture of soldering compounds. CONTAINERS: 100 lb. paper bags; 400 lb. bbls.

***Zinc Carbonate, Basic—Technical (Zinc Subcarbonate)—$2ZnCO_3.3Zn(OH)_2$:** A white, impalpable powder; insoluble in water; soluble in acids and alkalis. USE: As a pigment and rubber-compounding ingredient; in the manufacture of ceramics and cosmetics; in electroplating. CONTAINERS: Bbls. (225 lbs., net).

Zinc Chloride—Fused and Granular (Butter of Zinc)—$ZnCl_2$: White, translucent, hygroscopic solid or white, granular powder; soluble in water and alcohol; M.P. 262° C.; B.P. 732° C. SOLUTION: $ZnCl_2$ of various concentrations in water solution; clear, colorless solutions; miscible with water in all proportions, becoming slightly turbid at high dilutions. USE: As an ingredient in dry-cell batteries, tinning, galvanising and soldering fluxes; for the preservation and fireproofing of wood; in the manufacture of vulcanised hard fiber, intermediates, dyestuffs, zinc soaps; as an antiseptic and disinfectant, preservative for sizes; in electroplating solutions, sizing and weighting textiles. CONTAINERS: GRANULAR—630- to 750-lb. drums; 10- and 50-lb. pails. FUSED—1100 lb. drums. SOLUTION—Tank cars; 600- to 800-lb. drums; 160- to 200-lb. carboys.

Zinc Dust—Double A, Double B and Coarse—Zn: Fine, gray, metallic powder; soluble in acids and alkalis. USE: As a reducing agent in dye, intermediate, and other organic synthesis, and in manufacture of sodium and zinc hydrosulfite and other chemicals; in sherardizing iron and steel products; as an ingredient in soot removers, in pipe-joint lubricants, metallic zinc paints, fireworks; as a deoxidiser for bronzes; in the precipitation of heavy metals from solutions; in the precipitation of zinc solutions for the recovery of metallic cadmium; in the recovery of gold and silver in cyaniding processes; in purifying fats and oils; in bleaching mechanical paper pulp; in metallizing paper. CONTAINERS: 75- to 500-lb. steel drums or pails.

Zinc Sherardizing—Coarse Zinc Dust—Zn: Fine, gray, metallic powder. USE: In sherardizing iron and steel products. CONTAINERS: 75- to 500-lbs. steel drums or pails.

Zinc Slab—Intermediate, Brass Special, Prime Western—Zn: Large rectangular-shaped slabs of grey metallic color; weight from 50–60 lbs. each. USE: For hot dip galvanising; for brass and zinc alloy manufacture. CONTAINERS: Bulk.

***Zinc Stearate—U.S.P.—$Zn(C_{18}H_{35}O_2)_2$:** Fine, white, soft, amorphous, bulky powder; insoluble in water, alcohol and ether; soluble in acids; M.P. 130° C. USE: In the manufacture of waterproofing and fire-

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FABRICS AND FINISHES DEPARTMENT

FABRICS DIVISION

GENERAL OFFICES:

Pyroxylin Coated and Synthetic Resin Coated Materials: Newburgh, New York
Rubber Coated, Synthetic Rubber Coated and Synthetic Resin Coated Materials; Non-Woven Cellulosic Fiber Products: Fairfield, Connecticut

BRANCH OFFICES:

Boston 15, Massachusetts, 1019 Commonwealth Avenue
Chicago 14, Illinois, 2100 Elston Avenue
Cincinnati 2, Ohio, 106 East Court Street
Detroit 2, Michigan, 5-238 General Motors Building
Los Angeles 3, California, 5801 South Broadway
New York 1, New York, Empire State Building, 350 Fifth Avenue
St. Louis 8, Missouri, 3643 Delmar Boulevard

PLANTS:

Newburgh, New York Fairfield, Connecticut Russell, Massachusetts

PRODUCTS

PYROXYLIN COATED AND IMPREGNATED MATERIALS

"Fabrikoid" Pyroxylin Coated and Impregnated Fabrics: The fabrics are processed with pyroxylin so as to produce a tough, durable, uniform film which is thoroughly water resistant and washable. Manufactured in a wide variety of colors, embossed effects and finishes, "Fabrikoid" is available in a range of grades or qualities, based on the service requirements of the ultimate end use. Grades are determined by the weight and construction of the fabric base and the amount of pyroxylin applied. The following list shows how "Fabrikoid" is used by other manufacturers:

Automotive: For upholstery and trim, bindings and welts and winter-fronts. Colored deck covering for station wagons.
Baby Carriages: For upholstery and tops.
Belts
Binding and Welts
Bookbinding
Brief Cases
Card Table Covers
Case Coverings
Draw Sheet: For newspaper printing presses.
Enrober Belting: For candy manufacturing.
Florist's Decorative Ribbon
Footwear: For upper stock in some types of shoes and slippers, for quarterlining and for sock lining. Non-tarnishing gold and silver metallic "Fabrikoid" for evening shoes and trim.
Furniture Upholstery
Handbags and Pocketbooks
Hassocks and Floor Pillows
Hat Sweats
Luggage: For coverings, linings and trim.
Motion Picture Screens
Novelties: For change purses, powder puff containers, card cases, comb cases.
Paper Machine Aprons: For paper making equipment.
Railroads: For upholstery, car curtains, and vestibule curtains.
School Bags
Slippers: For men and women's bedroom slippers.
Sporting Goods
Table Mats and Pads: For coverings.
Trimmings: For millinery and costumes.

"Fabkote" Pyroxylin Coated Non-Woven Cellulosic Base Material: The following list shows how "Fabkote" is used by other manufacturers:

Belts
Bookbinding: For catalogs, notebooks and loose-leaf binders.
Brief Cases
Case Coverings
Luggage
Novelties
School Bags

Pre-Doped Fabrics: Pyroxylin coated and impregnated fabrics and tapes, designed for covering control surfaces (rudders, ailerons, etc.) on aircraft.

PX Cloth: A special grade of pyroxylin impregnated, washable book cloth for bookbindings.

Tablecloths: A pyroxylin coated fabric for washable, waterproof tablecloths and shelf covering. This pyroxylin coated fabric is also used by other manufacturers for making shelf edging and chair pads.

"Tontine" Pyroxylin Coated and Impregnated Washable Window Shade Cloth.

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SYNTHETIC RESIN COATED AND IMPREGNATED MATERIALS

P. C. "Fabrikoid" Synthetic Resin Coated Fabrics: Heavy weight grades of special purpose, plastic coated fabrics made by spreader process. The fabrics are processed with synthetic resin for end use applications which require greater resistance to flame, heat, cold, flexing and outdoor exposure than that found in regular standard "Fabrikoid". Available in special fire resistant grades. The following list shows how P. C. "Fabrikoid" is used by other manufacturers:

Automotive: For upholstery and trim, bindings and welts and winter fronts.

Baby Carriages: For upholstery and tops.
Belts
Bookbinding: For loose leaf binders.
Furniture Upholstery
Handbags and Pocketbooks
Luggage

"Fabrilite" Synthetic Resin Coated Fabrics: Light weight grades of special purpose, plastic coated fabrics. The fabrics are processed with synthetic resin. A line of special "Fabrilite" cements are available for fabricating the following list of items made from "Fabrilite" coated fabrics by other manufacturers:

Aprons
Bowl Covers
Card Table Covers
Food Bags
Garment Bags
Garment Linings
Heat Sealable Containers
Household Accessories
Ironing Board Pads
Raincoats
Shower Curtains

Tablecloths: A synthetic resin coated fabric for washable, waterproof tablecloths and shelf covering.

CEMENTS

"Fabrilite" Cements: Made from synthetic resin compositions for fabricating raincoats and other items of merchandise made from "Fabrilite" synthetic resin plastic coated fabrics.

"Fairprene" Industrial Cements: These cements are made from synthetic rubber compounds for adhering various combinations of cured and uncured "Fairprene" sheet stock (without fabric insert), cured and uncured "Fairprene" coated fabrics, cured and uncured rubber, leather, fabrics, paper, metal, wood, glass and porcelain.

CHEMICALLY TREATED FABRICS

Brattice Cloth: An air deflecting, fire resistant product developed to withstand varying atmospheric and service conditions encountered in mines.

CHEMICALLY TREATED RUBBER

"Isolac" Chemically Treated Rubber: A composition of chemically treated rubber for use in compounding rubber soles and heels for shoes.

RUBBER COATED, SYNTHETIC RUBBER COATED, AND SYNTHETIC RESIN COATED MATERIALS

"Cavalite" Rubber Coated Fabrics: A light weight, rubber coated fabric for raincoat and hospital sheeting use.

P. C. "Cavalon" Synthetic Resin Coated Fabrics: A line of heavy weight grades of plastic coated fabrics made by the calendered process. The fabric is processed with synthetic resin and designed for heavy duty upholstery on indoor or outdoor institutional furniture and public seating, and for automobiles, tractors, airplanes, railroads, busses and ships. Manufactured in a wide range of bright colors, embossed effects and finishes. Resistant to flexing, heat and cold. Available in special fire resistant grades.

S. R. "Cavalon" Neoprene Coated Fabrics: A line of coated fabrics designed for high grade, heavy duty upholstery use where maximum resistance to wear and abrasion is desired. Made with neoprene, du Pont's chloroprene. S. R. "Cavalon" has outstanding resistance to vegetable and mineral oils, oxidation in sunlight and perspiration. Manufactured in a wide range of colors, embossed effects and finishes. Recommended for all purpose heavy duty seating, in theatres, trucks, busses, automobiles, hotels, restaurants and institutions. Available in special fire resistant grades.

"Cavaltex" Rubber Coated Fabrics: A high grade line of rubber coated fabrics for raincoat and rough wear garment use. Manufactured in colors, finishes and embossed effects reproducing horse hide leather.

"Everbright Decking" Rubber Coated Fabrics: A line of rubber coated fabrics for deck coverings on station wagons, trucks and busses.

"Fabrilite" Synthetic Resin Coated Fabrics: A line of light weight grades of special purpose, synthetic resin plastic coated fabrics made by the calendered process for the raincoat and garment trade. A special line of "Fabrilite" cements are available for fabricating these items.

"Fairprene" Synthetic Rubber Coated Fabrics: A line of special purpose, synthetic rubber coated fabrics designed for industrial applications in the automotive, aviation, chemical, petroleum and marine construction fields. "Fairprene" coated fabrics have unique oil, chemical, heat, cold, flame, abrasion, flexing and sunlight resistance for dia-

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FABRICS DIVISION

phragms, gaskets, washers, packings, shock and insulating pads, seam sealants, and curing bags and blankets for molded plywood. A special line of "Fairprene" cements are available for use with "Fairprene" coated fabrics.

"Fairprene" Hospital Sheetings: A line of synthetic rubber coated fabrics designed especially for hospital sheeting use. "Fairprene" hospital sheetings have outstanding resistance to alcohol, oils, stains, blood, urine and sterilization.

"Fairprene" P.A.W. Tape (Protective and Water-stop): A seam sealant engineered for shipbuilding and aircraft use in oil, air and water tight structural joints.

"Rug Anchor" Rug Underlay: Synthetic rubber sponge coated fabric which prevents rugs from slipping.

"Teal" Rubberized Automobile Curtain and Top Fabric: For convertible automobiles.

"Ventube" Rubberized Tubing: Flexible ventilating tubing for mines, tunnels and underground construction. Also for industrial ventilation in shiphold construction, in loading and unloading, shipholds, cleaning tanks, manholes and boilers. Available for both blower (collapsible) and exhaust (non-collapsible) types of motor driven fans.

Other rubberized fabrics are manufactured in many grades depending upon service requirements, the grades being determined by the weight and construction of the fabric base and the amount of compound applied. The following list shows how these rubberized fabrics are used by other manufacturers:

Bags and Trunks
Belts and Dress Accessories
Blankets
Camera Bellows
Cover Cloths for Typewriters and Business Machines.
Hospital Sheetings
Powder Bags for Transporting Explosives
Sporting Goods Materials for Footballs, Basketballs, Beach Balls, Tennis Racquet Covers, Golf Bags, Cushion Beach Mats and Hunting Garments.
Weather Stripping Gaskets and Welts for household uses and appliances.

SPONGE RUBBER PRODUCTS

Press Sponge: Rubber and synthetic rubber products for automotive use as anti-squeaks, vibration absorbers, weather stripping and carpet padding. Also for home use as a weather stripping; supplied in strips with adhesive coating on the back.

"Velvetex" Rug Cushion: Sponge rubber rug cushion which gives depth and softness to rugs and at the same time prevents slipping.

SYNTHETIC RUBBER SHEET STOCKS

"Fairprene" Synthetic Rubber Sheet Stocks: A line of sheet stocks (with or without fabric back) made from synthetic rubber compounds for special industrial applications in the automotive, aviation, chemical, petroleum and marine construction field. Has unique oil, chemical, heat, cold, flame, abrasion, flexing and sunlight resistance for gaskets, washers, packings, shock and insulating pads, seam sealants and curing bag and blankets for molded plywood. A special line of "Fairprene" cements are available for use with "Fairprene" sheet stocks.

SYNTHETIC RESIN SHEET STOCKS

"Fabrilite" Synthetic Resin Sheet Stocks: A line of heat-sealable sheet stocks (without fabric insert) made from synthetic resin compounds. The following list shows how this sheet stock is used by other manufacturers:

Aprons
Bowl Covers
Food Bags
Footwear: Upper Stock
Garment Bags
Hand Bags and Pocketbooks
Household Accessories
Raincoats
Shower Curtains

NON-WOVEN CELLULOSIC FIBER MATERIALS

"Texon" Impregnated Fiber Materials: A line of non-woven cellulosic fiber products impregnated with rubber, synthetic rubber and synthetic resin compositions.

The following list shows how these materials are used by other manufacturers:

Coating Industry:
Coating Base
Molding Industry:
Molding Medium
Shoe Industry:
Counters
Innersoles
Midsoles
Sock Lining
Soft Box Toes

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SOLVENTS SOLD BY

FINISHES DIVISION

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	DIVISION OR DEPARTMENT	PAGE NO.
Sodium Silicate—Anhydrous	*Grasselli*	175
Sodium Silicate Glass (See Sodium Silicate—Anhydrous)	*Grasselli*	175
Sodium Silicate Solution	*Grasselli*	175
Sodium Silicofluoride	*Grasselli*	175
Sodium Stannate	*Electrochem*	132
Sodium Sulfate (See Salt Cake)	*Grasselli*	172
— Anhydrous	*Grasselli*	175
— Crystals (See Glauber's Salt)	*Grasselli*	168
— Decahydrate (See Glauber's Salt)	*Grasselli*	168
Sodium Sulfohydrate (See Sodium Hydrosulfide)	*Grasselli*	174
Sodium Sulfide—Crystal	*Grasselli*	175
Sodium Sulfide—Concentrated (See Sodium Sulfide—Crystal)	*Grasselli*	175
Sodium Sulfite	*Grasselli*	176
— Anhydrous	*Grasselli*	176
— Crystal	*Electrochem*	135
Sodium Sulfocyanate (See Sodium Sulfocyanide)	*Electrochem*	135
Sodium Sulfocyanide	*Electrochem*	131
Sodium Sulfuret (See Polysulfide) (See also Sodium Sulfide)	*Grasselli*	175
Sodium Tetraborate (See Borax)	*Grasselli*	164
Sodium Thiocyanate (See Sodium Sulfocyanide)	*Electrochem*	135
Sodium Thiosulfate (See Sodium Hyposulfite)	*Grasselli*	174
Sodium Uranate	*Electrochem*	129
Sodium Uranyl Carbonate	*Electrochem*	129
Sodium-Zinc Alloy	*Grasselli*	176
Soft Box Toe Material (See also "Texon" Impregnated Fiber Materials)	*Plastics*	208
Soil Compound NC	*Fabrics*	145
Soil Poison (See Soil Compound NC)	*Grasselli*	176
Soldering Flux (See Flux, Soldering)	*Grasselli*	176
Soldering Liquid Flux (See Fluxes, Soldering Liquid)	*Grasselli*	167
Soles, Material for (See "Isolac" Chemically Treated Rubber)	*Grasselli*	167
"Solozone" Sodium Peroxide (See Sodium Peroxide—Technical)	*Fabrics*	144
Soluble Blue Pigment (See Pigment Colors)	*Electrochem*	134
Soluble Cotton (See Nitrocellulose)	*Pigments*	208
"Solux" Rubber Antioxidant	*Finishes*	152
	Rubber Chem	194
Solvents		
— Acetate Mixtures	*Finishes*	150
— Acetic Ether	*Finishes*	150
— Acetone, Pure	*Grasselli*	162
— Alcohol, Denatured (See Denatured Alcohol, Completely and Denatured Alcohol, Specially)	*Petroleum*	191
— Amyl Acetate (See Acetate, Amyl)	*Finishes*	150
— Amyl Alcohol	*Finishes*	150
— Amyl Alcohols, Mixed	*Ammonia*	123
— Benzyl Alcohol, FFC	*Fine Chem*	185
— Benzyl Alcohol—Technical	*Fine Chem*	185
— Butyl Acetate (See Acetate, Butyl)	*Finishes*	150
— Butyl Alcohol (See Alcohol, Normal Butyl)	*Finishes*	150
— Carbon Bisulfide	*Grasselli*	165
	Rayon	212
— Carbon Bisulfide—Carbon Tetrachloride Mixtures (See Carbon Tetrachloride—Carbon Bisulfide Mixtures)	*Electrochem*	135

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Solvents (*Continued*)	DIVISION OR DEPARTMENT	PAGE NO.
— Carbon Tetrachloride	*Electrochem*	135
— Carbon Bisulfide Mixtures	*Electrochem*	135
— Ethylene Dichloride Mixtures	*Electrochem*	135
— Carbon Tetrachloride Mixture (See Carbon Tetrachloride—Ethylene Dichloride Mixture)	*Electrochem*	135
— Chloroform	*Electrochem*	129
— Cyclohexane	*Ammonia*	123
	Fine Chem	188
— Cyclohexanol (See "Hexalin" Solvent)	*Ammonia*	124
	Fine Chem	188
— Cyclohexanone	*Ammonia*	123
	Fine Chem	188
— "Decalin" Solvent	*Ammonia*	123
	Fine Chem	188
— Dibutyl Phthalate	*Finishes*	151
— Diisopropyl Carbinol	*Ammonia*	124
— Diisopropyl Ketone—Technical	*Ammonia*	124
— Dimethyl Ether (Methyl Ether)	*Ammonia*	124
— Dimethyl Formamide	*Ammonia*	124
— Dimethyl Pentanol, 2,4- (See Diisopropyl Carbinol)	*Ammonia*	124
— "Dissolvo" Grease Solvent	*Finishes*	154
— Dry-Clean Fabric Cleaner	*Finishes*	154
— Dry Cleaning (See Dry Cleaning Fluids)		
— Du Pont Tar Remover	*Finishes*	154
— Ethyl Acetate (See Acetate, Ethyl and Acetic Ether)	*Finishes*	150
— Ethyl Alcohol (Pure Non-Beverage)	*Petroleum*	191
— Ethylene Dichloride	*Electrochem*	135
— Ethylene Glycol	*Ammonia*	124
— Formamide—Technical	*Ammonia*	124
	Electrochem	133
— Fusel Oil (Crude)	*Petroleum*	191
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	Fine Chem	188
— Higher Alcohols—HTP	*Ammonia*	124
— "Hydraphtsl" Textile Processing Agent	*Fine Chem*	187
— Isobutanol	*Ammonia*	124
— Isobutyl Acetate	*Ammonia*	124
— Isobutyl Alcohol (See Isobutanol)	*Ammonia*	124
— Isobutyl Glycolate (See Isobutyl Hydroxyacetate)	*Ammonia*	125
— Isobutyl Hydroxyacetate	*Ammonia*	125
— Isobutyl Propionate	*Ammonia*	125
— "Merpentine" Textile Processing Agent	*Fine Chem*	188
— Metal Degreasing (See "Perclene" and "Triclene" D Solvents)	*Electrochem*	135
— Methanol (Methyl Alcohol)	*Ammonia*	125
	Electrochem	133
— Methoxymethoxyethanol (MME)	*Ammonia*	125
— Methyl Alcohol (See Methanol)	*Ammonia*	125
	Electrochem	133
— Methyl Chloride	*Ammonia*	125
	Electrochem	129
— Methyl Ether (See Dimethyl Ether)	*Ammonia*	124
— Methyl Formate	*Ammonia*	125
— Methyl Glutarate	*Ammonia*	125

	DIVISION OR DEPARTMENT	PAGE NO.
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— Methyl "Hexalin" Solvent	*Fine Chem*	188
— Methyl Hydroxyacetate	*Ammonia*	125
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— Nitrobenzene (Oil of Mirbane)	*Dyestuffs*, *Explosives*	184, 141
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— Perchloroethylene	*Electrochem*	135
— "Perclene" Solvent	*Electrochem*	135
— "Ponsolve" Alcohol Solvent	*Petroleum*	191
— "Prep-Sol" Cleaner	*Finishes*	149
— Propanol (Normal Propyl Alcohol)	*Ammonia*	125
— Remington Powder Solvent	*Rem Arms*	215
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— "Triclene" Solvent (See Trichloroethylene)	*Electrochem*	135
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— Type 232, Fine Grain Sound Positive	*Photo Prod*	197
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— "Fabrikoid" Pyroxylin Coated and Impregnated Fabrics	*Fabrics*	143
— Rubberized Fabrics	*Fabrics*	145

NOTE: Underscoring added to set off Solvents sold by Finishes Division.

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FINISHES DIVISION: Automotive Finishes

Lacquers:

Dip: Air-dry, pigmented, colored or clear lacquers on a special modified pyroxylin base; applicable by dipping. USE: On instrument panels, molding, interior decoration, etc. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

"Duco" Lacquers: Air-dry, pigmented, colored lacquers on a special modified pyroxylin base; applicable by spray only. USE: Finishing of steel automobile bodies, lamps and sheet metal parts. CONTAINERS: Pt., qt., ½-, 1- and 5-gal. cans; 50 gal. drums.

"Duco" Striping Lacquers: Air-dry, pigmented, colored lacquers; applicable by brushing. USE: For striping automobile bodies and touch-up work. CONTAINERS: ¼-pt., qt., ½-, 1- and 5-gal. cans.

Primers:

Black Dipping Primer (Baking, Pigmented, Oil Type): Unusual stability in large dip tanks. USE: Dipping fenders, hoods and miscellaneous small parts. Base coat for "Duco" or "Dulux" lacquers. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

"Dux" Primer (One-Bake Type): Baking, pigmented, colored, liquid paints on a synthetic base; applied by spray. USE: Applied to steel automobile bodies and followed immediately by special "Dux" surfacer without drying period between coats. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Graining Compounds: Air-dry or baking oil base paste materials for use over Graining Ground Coats (Synthetic or Oil Type) for simulated wood grains. USE: On decorative hardware, garnish mouldings, instrument panels, escutcheons, etc. for car interiors. CONTAINERS: 1- and 5-gal. cans.

Graining Ground Coats (Synthetic or Oil Type): Baking type semi-gloss materials used as graining base for simulated wood grain effects. USE: On decorative hardware, garnish mouldings, instrument panels, escutcheons, etc., for car interiors. CONTAINERS: 1- and 5-gal. cans.

Metal (Oil Type): Air-dry and baking, pigmented, colored, liquid paints with oil base; applicable by spray. USE: On automobile bodies and sheet metal parts to give adhesion between the metal and succeeding coats. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Metal (Pyroxylin Type): Air-dry, pigmented, colored, liquid paints on a pyroxylin base; applicable by spray. USE: For touch-up work only on automobile bodies. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Metal (Synthetic Type): Air-dry and baking, pigmented, colored, liquid paints with synthetic base; applicable by spray or brush. USE: On automobile bodies and sheet metal parts to give adhesion between the metal and succeeding coats. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Wood: A special low-pigmented type primer applicable by brush or spray. USE: On wooden commercial automobile bodies. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Wood Sealer: Clear synthetic or oil type, air-dry, penetrating sealer with or without fungicide; applicable by dip, brush, spray, or flow. USE: On wood before other finish to seal pores and prevent failure by moisture absorption. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Primer-Surfacers:

"Preparakote": Air-dry, highly pigmented, liquid paints on a special synthetic base; applicable by spraying or brushing. USE: On steel automobile and commercial car bodies, preparatory to finishing with either "Duco" or "Dulux" finishes. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Primer-Surfacer (Baking Type): Highly pigmented, liquid paints of the baking type on an oil base; applicable by spraying. USE: On steel automobile and commercial car bodies, preparatory to finishing with either "Duco" or "Dulux" finishes. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Putties: Air-dry, highly pigmented, paste materials on oil base; applied by glazing to fill indentations in metal which are too deep for the surfacer to fill. USE: On automobile bodies over primer. CONTAINERS: ½-, 1- and 5-gal. cans.

Putties, "Duco": Air-dry, highly pigmented, paste materials; very fast drying; applied by glazing to fill metal imperfections. USE: On automobile bodies preparatory to finishing with either "Duco" or "Dulux" finishes. CONTAINERS: ½-, 1- and 5-gal. cans.

Putties, "Dulux": Air-dry; highly pigmented, paste materials; minimum shrinkage; applied by glazing to fill metal imperfections. USE: Preparatory to finishing with either "Duco" or "Dulux" finishes. CONTAINERS: ½-, 1- and 5-gal. cans.

Putties, "Dux": Air-dry and baking, highly pigmented, paste materials on a synthetic base; applied by glazing to fill indentations in metal which are too deep for the surfacer to fill. USE: On automobile bodies over primer. CONTAINERS: ½-, 1- and 5-gal. cans.

Remover, Paint and Varnish: Suspension of paraffin in clear liquid, applicable by brush. USE: For removal of automotive finishes from bodies. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Retarders: Slow-evaporating, high-boiling "Duco" solvents. USE: Added to "Duco" thinner to prevent blushing in humid weather. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Surfacers: Air-dry and baking, highly pigmented products on oil, pyroxylin and synthetic types of bases; applicable by spraying over primer to give a satisfactory smooth surface when sanded, preparatory

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Note : Vertical lines drawn to set off Solvent descriptions

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to "Duco" and "Dulux" finishes, or other final finish applications. USE: On automobile bodies and sheet metal parts. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

FINISHES DIVISION: Automotive Refinishing Materials

Thinners: Clear, liquid solvents. USE: For the reduction of primers, surfacers and enamels to proper working consistency. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums; tank wagons; tank cars.

AUTOMOTIVE REFINISHING MATERIALS

GENERAL OFFICE: Du Pont Building, Wilmington 98, Delaware

REGIONAL OFFICES:

Atlanta 3, Georgia, 619–21 Peachtree Street, N. E.
Boston 15, Massachusetts, 1019 Commonwealth Avenue
Chicago 14, Illinois, 2100 Elston Avenue
Cleveland 14, Ohio, Union Commerce Building, 925 Euclid Avenue
Dallas 1, Texas, 2312 Gaston Avenue
Philadelphia 3, Pennsylvania, 1616 Walnut Street
San Francisco 6, California, 235 Second Street

WHOLESALE STORES:

Atlanta 3, Georgia, 619–21 Peachtree Street, N. E.
Baltimore 11, Maryland, 2930 Remington Avenue
Birmingham 3, Alabama, 1912 Second Avenue, S.
Boston 15, Massachusetts, 1019 Commonwealth Avenue
Charlotte 2, North Carolina, 500 North Tryon Street
Chicago 16, Illinois, 2530 South Michigan Avenue
Cincinnati 2, Ohio, 106 East Court Street
Cleveland 14, Ohio, 1608 East 24th Street
Columbus 15, Ohio, 172 East Long Street
Dallas 1, Texas, 2312 Gaston Avenue
Des Moines 9, Iowa, 1206 Grand Avenue
Detroit 2, Michigan, 510 Harper Avenue
Houston 1, Texas, 2219 McKinney Avenue
Jacksonville 1, Florida, 954 East Adams Street
Kansas City 8, Missouri, 1600 Grand Avenue
Miami 36, Florida, 50 Northeast Tenth Street
Milwaukee 5, Wisconsin, 1806 West North Avenue
Minneapolis 3, Minnesota, 1207 Harmon Place
New Orleans 12, Louisiana, 845 Carondelet Street
Philadelphia 40, Pennsylvania, 16th and Luzerne Streets
Pittsburgh 12, Pennsylvania, 601 East Robinson Street
Portland 3, Maine, 255 Forest Avenue
Providence 3, Rhode Island, 355 Weybosset Street
St. Louis 8, Missouri, 3643 Delmar Boulevard
Toledo 2, Ohio, 721 Adams Street
Washington 9, District of Columbia, 1821 14th Street, N. W.

WAREHOUSES:

Denver 1, Colorado, 34th and Fox Streets
Los Angeles 3, California, 5801 South Broadway
Phoenix 2, Arizona, 347 North First Avenue
Seattle 9, Washington, 525 Boren Avenue

PLANTS:

Flint, Michigan
Fort Madison, Iowa
Parlin, New Jersey
Philadelphia 46, Pennsylvania, 3500 Gray's Ferry Road
South San Francisco, California, Post Office Box 608
Toledo 12, Ohio, 1930 Tremainsville Road

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FINISHES DIVISION: Automotive Refinishing Materials

PRODUCTS

Bleederseal: Can be used over and under both pyroxylin and alkyd resin finishes. USE: To prevent discoloration of the topcoat, if underneath color tends to bleed. CONTAINERS: Qt. jars.

"Blue Diamond" Waxless Remover for Wood: USE: For removing old finishes from wooden surfaces. CONTAINERS: 1- and 5-gal. cans.

Chassis Blacks: Varnish type products. USE: To refinish chassis. CONTAINERS: 1- and 5-gal. cans; 55 gal. drums.

Clear Gloss Lacquer: A pyroxylin type finish, either applied straight or mixed with "Duco" lacquers to increase the gloss. USE: To refinish automobiles. CONTAINERS: Pt., qt., 1- and 5-gal. cans.

Clear Wood Primer: For priming wood before applying "Preparakote" Primer. CONTAINERS: Qt. and gal. cans.

"Duco" Lacquers: Clear, pigmented and metallic lines of pyroxylin finishes applied by spray to metal surfaces of automobiles. USE: For refinishing. CONTAINERS: Pt., qt. and gal. cans.

"Duco" Sealer: Used on wooden furniture to hold out "Duco" topcoat finish; for interior use only. CONTAINERS: 1- and 5-gal. cans.

"Duco" Tinting Colors: For tinting and mixing. USE: With "Duco" colors. CONTAINERS: Qt., 1- and 5-gal. cans.

"Dulux" Enamels: Clear, pigmented and metallic synthetic products. USE: To refinish automobiles, trucks and all types of commercial vehicles. CONTAINERS: Qt. and gal. cans.

"Dulux" Enamels for Striping and Lettering: Colored, synthetic enamels for striping and lettering work. USE: On cars and trucks. CONTAINERS: ½ pt. cans.

"Dulux" Exterior Clear: For mixing with "Dulux" colors to increase gloss; as a slow size with large decalcomanias; as a protective coating over decalcomanias, lettering, etc. CONTAINERS: Qt. and gal. cans.

"Dulux" Make-Ready Undercoat: Applied under "Dulux" lacquers over old finishes. USE: To improve adhesion and to obtain uniform gloss. CONTAINERS: Qt., 1- and 5-gal. cans.

"Dulux" Tinting Colors: For tinting and mixing "Dulux" colors. CONTAINERS: Qt. and gal. cans.

Du Pont Flint Wax: For waxing automobiles. CONTAINERS: Qt. cans.

Glazing Putties: "Dulux" Glazing Putty, "Duco" Glazing Putty and oil type products. USE: For filling imperfections on the surfaces of automobile and truck bodies.

Gold Bronzes: Bronze powders to be mixed with clear and thinner. USE: For striping automobile and truck bodies. CONTAINERS: 1 oz. papers; 1 lb. cans.

Inside Body Gray Enamel: A varnish type enamel. USE: For the inside of truck bodies. CONTAINERS: Qt., 1- and 5-gal. cans.

Motor Enamel: A gray, varnish type enamel. USE: For refinishing automobile and truck engines. CONTAINERS: Qt., 1- and 5-gal. cans.

"Prep-Sol" Cleaner: A product used to clean surfaces which are to be refinished with "Dulux" or "Duco" finishes. CONTAINERS: Qt., 1- and 5-gal. cans.

Primers:

"Dulux" Metal Primer: Applied by brush or spray to metal surfaces under "Duco" and "Dulux" finishes. CONTAINERS: Qt., 1- and 5-gal. cans.

Oil Type: Used for priming wood and old paint in refinishing work. CONTAINERS: Qt., 1- and 5-gal. cans.

"Preparakote" Primer: A quick drying primer for use under "Duco" and "Dulux" finishes. Fills and can be sanded. USE: For refinishing automobile and truck bodies. CONTAINERS: Qt. and gal. cans.

Primer-Surfacers: Pyroxylin type products. USE: For refinish work on metal surfaces. CONTAINERS: Qt., 1- and 5-gal. cans; 15 gal. drums.

"Pyra-Prep" Sealer: For use under "Duco" lacquer to prevent sinking in; to obtain uniform gloss. CONTAINERS: Qt., 1- and 5-gal. cans.

Pyroxylin Primer: A pyroxylin type primer. USE: For touch-up work and over old finish in automobile refinishing; applied by spray. CONTAINERS: Qt., 1- and 5-gal. cans.

Quick Gold Size: USE: For laying gold leaf and decalcomanias on "Duco" and "Dulux" finishes. CONTAINERS: Qt. cans.

Refrigerator Refinishes: "Duco" and "Dulux" white finishes. USE: To completely refinish or touch up refrigerator exteriors. CONTAINERS: Qt., 1- and 5-gal. cans.

Retarder Thinner for "Duco" Lacquers: A slow drying thinner to be added to "Duco" lacquers to avoid blushing on damp days. CONTAINERS: Pt., 1- and 5-gal. cans.

Rubber Finish: For renewing appearance of rubber running-boards, mats, tires, etc. CONTAINERS: Qt. and gal. cans.

Rubbing Compounds: Mediums for producing gloss on "Duco" lacquers. USE: In automobile refinishing. CONTAINERS: Qt., 1- and 5-gal. cans.

Super "Removo" Paint and Varnish Remover: A remover having a wax content. USE: For removing old finishes from metal surfaces. CONTAINERS: Qt., 1- and 5-gal. cans.

Shielding Compound: A masking compound. USE: To protect surfaces not intended to be painted while other surfaces are being painted; can be washed off with sponge after painted surface is dry. CONTAINERS: Qt. and gal. cans.

Surfacers, "Duco": Used under a "Duco" lacquer color coat in refinishing automobiles. CONTAINERS: 1- and 5-gal. cans.

Thinners for "Duco" Lacquers: Used for thinning pyroxylin products for spraying. CONTAINERS: 1 gal. cans; 5 gal. pails; 15-, 30- and 53-gal. drums.

Thinners for "Dulux" Surfacers: Used to reduce the viscosity of "Dulux" and other alkyd resin products. CONTAINERS: Qt. and gal. cans; 5 gal. pails; 15-, 30- and 53-gal. drums.

INDUSTRIAL FINISHES

GENERAL OFFICE: Du Pont Building, Wilmington 98, Delaware.

REGIONAL OFFICES:

- Atlanta 3, Georgia, 619–21 Peachtree Street, N. E.
- Boston 15, Massachusetts, 1019 Commonwealth Avenue
- Chicago 14, Illinois, 2100 Elston Avenue
- Cleveland 14, Ohio, Union Commerce Building, 925 Euclid Avenue
- Philadelphia 3, Pennsylvania, 1616 Walnut Street
- San Francisco 6, California, 235 Second Street

PLANTS:

- Boston 49, Massachusetts, 59 Waters Avenue, Everett Station No. 49
- Chicago 14, Illinois, 2100 Elston Avenue
- Flint 2, Michigan, Hamilton Avenue and St. John Street
- Fort Madison, Iowa, Post Office Box 319
- Parlin, New Jersey
- Philadelphia 46, Pennsylvania, 3500 Gray's Ferry Road
- South San Francisco, California, Linden Avenue, Post Office Box 608
- Toledo 12, Ohio, 1930 Tremainsville Road

PRODUCTS

"A. C. E." Asphalt Chromate Emulsion: In plant maintenance it is used for roof coating, for protection of wood and metal materials which are used underground, and to waterproof iron and steel flues, ducts, etc. CONTAINERS: 5 gal. cans; 50 gal. drums.

Acetate:

Amyl (Pentacetate)—$CH_3COOC_5H_{11}$: A water-white liquid used as a solvent for nitrocellulose and lacquers. CONTAINERS: 5 gal. cans; 50 gal. drums.

Butyl—$CH_3COOC_4H_9$: A water-white liquid used as a solvent for pyroxylin lacquers. CONTAINERS: 5 gal. cans; 50 gal. drums; tank cars.

Ethyl—$CH_3COOC_2H_5$: Colorless liquid used as a solvent for nitrocellulose in the production of lacquers; furnished in several grades varying in ethyl acetate content. CONTAINERS: 5 gal. cans; 50 gal. drums; tank cars.

Mixtures: Used as solvents and thinners in finishes. CONTAINERS: 5 gal. cans; 50 gal. drums.

Acetic Ether: Synonymous term for ethyl acetate. Frequently used in referring to ethyl acetate of 99% strength. CONTAINERS: 5 gal. cans; 50 gal. drums.

Acid and Alkali Resisting Paints: A line of several grades and colors for maintenance use on wood and steel surfaces exposed to acid and alkali fumes. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Adhesives (See Cements, Page 151).

Airplane Dopes and Finishes: Airplane dopes are used for coating fabric wings. Airplane finishes, including undercoats and topcoat finishes, are used on wood and metal surfaces. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Alcohol:

Amyl—$C_5H_{11}OH$: A colorless liquid used in conjunction with nitrocellulose solvents in the production of lacquers. CONTAINERS: 5 gal. cans; 50 gal. drums; tank cars.

Normal Butyl—C_4H_9OH: A colorless liquid used in conjunction with nitrocellulose solvents in the production of lacquers. CONTAINERS: 5 gal. cans; 50 gal. drums; tank cars.

FINISHES DIVISION: Industrial Finishes

Aluminum Mixing Varnishes: Varnishes to be mixed with aluminum powder or paste for use on wood or metal. CONTAINERS: 1- and 5-gal cans; drums.

Aluminum Paints: Ready mixed and ready-to-mix aluminum paints for use on exterior and interior metal and wood surfaces. CONTAINERS: 1- and 5-gal. cans.

Aluminum Powder and Paste: Various grades for use in varnishes and bronzing liquids. CONTAINERS: ½-, 1-, 2- and 10-lb. cans; 50- and 100-lb. drums.

"Antoxide" Paint: A high grade, metal-protective, rust-inhibitive line of paints. CONTAINERS: 1- and 5-gal. cans.

Asphaltums, Air Drying Types: Black enamels for application to metal. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Baking Japans, Black Gloss: A baking type finish generally used over a Rubber Black First Coat; applied by dipping or spraying. CONTAINERS: 5 gal. cans; drums.

Bronze Powders: In various color shades and various grades of particle size. Applied to surfaces for decorative purposes usually by means of a liquid vehicle. Made by reduction of alloys of copper and zinc to the form of flake-like powder. CONTAINERS: 1-, 5-, 10-, 25-, 50- and 100-lb. cans.

Bronzing Liquids: Of various types including pyroxylin base, oil base and synthetic resin base; used as vehicles for the application of aluminum powder, aluminum paste and bronze powder. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Cable Lacquers: A complete line of lacquers used on various types of fabric covered electric wires and cables in order to increase electrical insulation and to provide protection from effects of oil and grease. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Cements:

Belt Cements: Pyroxylin base cements used in the manufacture of leather belts requiring resistance to the effects of moisture. CONTAINERS: 5 gal. cans; 50 gal. drums.

"Duco" Household Cement (Waterproof Cement): A pyroxylin base cement having a wide utility in the repair of articles made of wood, glass, ivory, leather, pearl or cloth. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

"Pyralin" Pyroxylin Cements: Pyroxylin base cements for use in cementing "Pyraheel" and other plastic facings to wooden heels by manufacturers of women's shoes. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Thermoplastic Cements: Used for cementing or laminating various surfaces, such as metal foils, cloth, glass and sheets of metal that require the application of heat and pressure. These cements are applied to the surfaces and after thoroughly drying are ready for the necessary heat and pressure treatment required. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Thermosetting Cements: Used for cementing or laminating various surfaces, such as plywood, glass, sheets of metal, etc. These cements are applied to the bondable surfaces and after thorough drying are ready for the required heat and pressure which creates a bond not affected by subsequent application of heat. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Special Cements: A wide range of adhesives for an extended field of specialized uses pertaining to the problems of bonding various substances, and involving many modifications of various application and curing methods. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Clear Lacquers: Gloss and flat lacquers for natural wood finishing. USE: For furniture finishing. CONTAINERS: Pt., qt., 1- and 5-gal. cans.

Collodion: Pyroxylin solutions in ether-alcohol solvents. USE: For production of products such as liquid corn plaster, corn cures and waterproof bandages. Stripping types are supplied for use by photoengravers. CONTAINERS: 5 gal. cans; 50 gal. drums.

Colors in Oil: Paste products used to produce special tints in paints, enamels and undercoats; full line of colors. CONTAINERS: ½ pt., qt. and gal. cans.

Dibutyl Phthalate—$C_{16}H_{22}O_4$: Colorless liquid somewhat oily in character used as a plasticizer in nitrocellulose lacquers. CONTAINERS: 5 gal. cans; 50 gal. drums.

Dopes (See Airplane Dopes and Leather Solutions, Pages 150 and 152).

Drawer Coaters: Waxy gum solutions used as finishes for the inside of wooden furniture drawers. CONTAINERS: 5 gal. cans; 50 gal. drums.

Driers: Compounds used to accelerate the oxidation of a finish which contains drying oils. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

"Duco" Furniture Lacquer: Used for finishing wood furniture. CONTAINERS: 5 gal. cans; 50 gal. drums.

"Duco" Furniture Sealers: Similar in composition to clear and flat "Duco" lacquers for finishing of wood furniture. Used on wood furniture as a preliminary coat which is sanded and then followed by a clear or flat "Duco" lacquer topcoat.

"Duco" Pigmented Enamel Finishes: Pyroxylin base enamels furnished in a wide range of colors and types for satisfying the finishing requirements of numerous industries. Applied directly to a surface or over undercoats, depending on the finish needed. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

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"Dulux" Clear Varnish: Synthetic resin base varnish made in various formulations for different types of requirements and characterized by unusual flexibility and durability. Applied either directly to a surface or as a topcoat over enamels for decorative and protective values. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

"Dulux" Pigmented Enamel and Paint Type Finishes: Synthetic resin base enamels and paints furnished in a wide range of colors of various specific types to meet the finishing requirements of numerous industries. Applied directly to a surface or over undercoats, depending on the finish needed. Furnished in both air-drying and baking types. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

"Dulux" Resins: Synthetic resins of the alkyd resin type sold under general sales designation of "Dulux" resins in grades suitable for the manufacture of varnishes, lacquers, resin base enamels and printing inks. CONTAINERS: 5 gal. cans; 50 gal. drums.

Enamels (Also See Asphaltums, "Duco", "Dulux", "Flintflex" and Engenamel): Pigmented finishes available in various colors and in various types, such as pyroxylin base enamels, oil base enamels and synthetic resin base enamels. Available in air-drying and baking types. Applied either directly to a surface or over undercoats, depending on the nature of the finish required. Applied by spraying, brushing, dipping or roller coating for protective and decorative purposes. CONTAINERS: 1- and 5-gal. cans 50 gal. drums.

Enamels, Baking and Air-Drying: General types in various colors including pyroxylin base, oil base and synthetic resin base; used for protective or decorative purposes on many surfaces. Applied either directly to a surface or over primers or surfacers, depending on the finish requirements. CONTAINERS: 1- and 5-gal. cans; drums.

Engenamel: A red enamel (pyroxylin base) used as a sealing coat for crank-cases, transmission cases, gear cases, etc., of gasoline motors. CONTAINERS: 5 gal. cans; 50 gal. drums.

Fillers:

Iron and Steel: A heavy, paste type of filler used over undercoats to smooth out imperfections in the metal. CONTAINERS: 100 lb. kegs; bbls.

Wood: Available in paste or liquid form. Used for filling pores in wood as part of the preparation of surface for subsequent application of varnishes or lacquers. CONTAINERS: LIQUID—5 gal. cans; 50 gal. drums. PASTE—25 lb. cans; 100 lb. kegs; bbls.

Finger Nail Polishes: Ready to use and available in various colors for sale to a limited and selected number of large distributors.

Flame Retardant Paints: White and gray paints used principally by manufacturers of slow-burning and fire-proof electric wires and cables. CONTAINERS: 100- and 500-lb. kegs.

"Flintflex" Finishes: Enamel finishes of the synthetic resin type, employing "Dulux" resins. Similar to "Dulux" enamels, but designed for interior use only. Available in air-dry and baking types. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Furniture Varnish, Clear and Flat: Made from drying oils combined with natural resins or synthetic resins. For application by brushing, dipping and spraying to various surfaces for the deposition of films which serve to protect or enhance the appearance of surfaces. CONTAINERS: 5 gal. cans; 50 gal. drums.

Hand Wash: A solvent combination, prepared to permit quick removal of pyroxylin films from the hands. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Implement Varnish, Clear: For application by brushing, dipping and spraying to various surfaces for the deposition of films which serve to protect or enhance the appearance of surfaces. CONTAINERS: 5 gal. cans; 50 gal. drums.

Insulating Varnish, Clear: Used to waterproof and improve the dielectric properties of fabric covered electrical wires and cables. CONTAINERS: 5 gal. cans; 50 gal. drums.

Lacquers (See Airplane Dopes, Bronzing Liquids, Cable Lacquers, "Duco" Lacquers, Metal Lacquers, Paper Lacquers and "Pyralux" Lacquers).

Leather Solutions:

Clear Glazing Lacquer: Clear, pyroxylin base lacquer used as a waterproof, protective coat to be applied over the pigmented coat on leather. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Metal Lacquers: Clear, pyroxylin base lacquers used as finishes direct to metal, as primers on metal for enamel coats, and as topcoats over pyroxylin enamels. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Metal Lacquers, Gum Base:

Dry-Dip: Used on small, inexpensive, metal articles which are dry after the plating process. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Water-Dip: Used on small, inexpensive, metal articles which are still wet after the plating process.

"NFL" Wood Stains (See Stains, Wood, Page 158).

Nitrocellulose (Pyroxylin or Soluble Cotton): Furnished in several grades, depending on nitrogen contents and viscosities; used for the production of lacquers, enamels, bronzing liquids, leather dopes,

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FINISHES DIVISION: Industrial Finishes

photographic film, cements, collodion, etc. The low viscosity grade of Du Pont nitrocellulose is sold under the trade-mark of "PXP." CONTAINERS: 50 gal. drums.

Paints: Pigmented finishes available in various colors and in both oil base and synthetic resin base types. Applied by brushing or spraying either directly to surfaces or over suitable primers, depending on the nature of the finish required and surfaces to be coated. These products include metal protective paints, prepared paints for wood, flat wall paints and a wide variety of special paints for miscellaneous purposes. (See Paint and Varnish Trade Sales.)

Paper Lacquers: (Clear lacquers made on pyroxylin base).

High Gloss: Used principally on labels or other paper articles where high gloss finish is desired. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Moistureproof: (Heat sealing or non-heat sealing). Used on labels, paper liners and paper wraps requiring appearance imparted by clear lacquer, plus high degree of impermeability to moisture vapor. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Paste (See Colors in Oil, Fillers and Stencil Paste).

Plasticizers (See Dibutyl Phthalate, Page 151).

Primers: Various general types, including pyroxylin base, oil base and synthetic resin base; used as the first or priming coat in a finishing system. CONTAINERS: 1- and 5-gal. cans; drums.

Putties: Oil base, synthetic resin base and pyroxylin base putties, both of the hard type and glazing type. For use in finishing where the surface imperfections are too pronounced to permit obtaining a smooth surface by the use of primer and surfacer coats. CONTAINERS: 1-, 5-, 10- and 25-lb. cans.

"PXP" Nitrocellulose (See Nitrocellulose, Page 152).

"Pyralux" Lacquer: A pyroxylin base lacquer suitable for application direct to metal surfaces used under indoor conditions. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Pyroxylin (See Nitrocellulose, Page 152).

Pyroxylin Solutions: Mixtures of nitrocellulose and solvents made up in various combinations as lacquer bases; also made up in combinations according to customers' specifications.

Refrigerator Finishes: A complete line of undercoats and white pigmented finishing coats for use on metal refrigerators. CONTAINERS: 5 gal. cans; 50 gal. drums.

Retarders: Exceptionally slow drying thinners used with pyroxylin base lacquers or enamels to retard speed of drying.

Sign Finishes: A complete line of finishes, including undercoats, "Duco" and "Dulux" background topcoats, "Duco" and "Dulux" stencil pastes and clear "Dulux" topcoats for silk screen stencil; press-printed, gum printed and lithographed metal signs. CONTAINERS: 5 gal. cans; drums.

Soluble Cotton (See Nitrocellulose, Page 152).

Solvents (See Acetate, Acetic Ether and Alcohol, Page 150).

Stains, Wood: Used under lacquer and varnish to intensify and produce various grain effects on wood and to produce imitation wood-grain effects on primed metal. Available in ready-for-use form involving choice of pigmented, oil-soluble, water-soluble and spirit-soluble stains. CONTAINERS: 5 gal. cans; drums. Also water-soluble stains available in dry powder form in 5 lb. cans.

Stencil Paste (See Sign Finishes, above).

Surfacers: Various general types, including pyroxylin base, oil base and synthetic resin base; used as a second or intermediate coat in a finishing system. CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Thinners: Appropriate combinations of solvents and diluents, including "Crown Spirits" turpentine substitute, used for the purpose of reducing the viscosity or consistency of finishes. Special grades available for various types of pyroxylin base, oil base and synthetic resin base finishes. Certain thinners used for pyroxylin base finishes may also be used to remove pyroxylin films and grease from surfaces which are to be refinished. (Also see Retarders, above). CONTAINERS: 1- and 5-gal. cans; 50 gal. drums.

Tin Decorating Finishes: Varnishes and enamels, both oil base and synthetic resin base, for application to tin plate which, after baking, is formed in dies to produce various types of metal containers. CONTAINERS: 5 gal. cans; 50 gal. drums.

Undercoaters (See Primers, Sealers and Surfacers).

Varnishes: Clear finishes for application by brushing, dipping or spraying; made from drying oils combined with natural resins or synthetic resins for application to various surfaces for the deposition of films which serve to protect or enhance the appearance of surfaces.

Waterproof Cement (See Cements, Page 151).

Wire Enamels: Base varnishes which on baking give enamel-like appearance; used for application to electrical wire for the purpose of providing insulation.

"No. 7" CHEMICAL SPECIALTIES

GENERAL OFFICE: Du Pont Building, Wilmington 98, Delaware

BRANCH OFFICE: San Francisco 6, California, 235 Second Street

PLANTS:

Flint, Michigan Parlin, New Jersey Toledo, Ohio

PRODUCTS

*Indicates Resale Products

"Dissolvo" Grease Solvent: A concentrated grease solvent. Mix with kerosene or light fuel oil for cleaning garage floors, grease pits, motors, tools, etc. Containers: 1- and 5-gal. drums.

***Dry-Clean Fabric Cleaner:** A non-flammable cleaning fluid, leaves no odor and does not shrink fabrics; recommended for all color-fast garments, gloves, draperies, upholstery and fine fabrics; removes grease, wax, fresh paint, gum, adhesive tape and road tar. Containers: 8-oz. and gal.

"Duco" Cleaner: A liquid cleaner-polish for all auto finishes. Removes dullness, traffic film and old wax from the finish. Especially recommended for use before applying wax. Containers: Pt. and gal. cans.

"Duco" Household Cement: A transparent, waterproof adhesive used in the manufacture or repair of articles made of wood, glass, china, metal, ivory, leather, paper or fabrics. Containers: 1¼ fl. oz. tubes (twelve to display carton).

"Duco" Wax: An easy polishing paste wax for autos and furniture. Produces a brilliant, durable luster and protects the finish from moisture and harmful ultraviolet rays of the sun. Containers: 7 oz.; 1 lb.

Du Pont Acid and Rust Inhibitor: For reconditioning old ethylene glycol anti-freeze. Neutralizes acid and prevents rust. Can also be used as a summer anti-rust in plain water. Containers: 5 oz.

Du Pont Anti-Rust: A powdered rust inhibitor which keeps auto cooling systems free from rust, helping to maintain engine efficiency. Containers: 2 oz.

Du Pont Bug Remover: An efficient cleaning powder for removing bug residue from fenders, windshields, frames, etc. Containers: 6 oz.

Du Pont Car Wash: A soapless chemical which, when dissolved in water, makes car washing easy. Removes dirt and grease quickly and safely. Makes drying unnecessary. Easy on the hands and car finish. Containers: 6 lbs.

Du Pont Cellulose Sponge: (See Page 211).

Du Pont Cooling System Cleanser: A powerful, acid type cleanser which cleans badly clogged radiators by actually dissolving rust, scale and grease without injury to hose packings or metal parts. Does not require reverse flushing. Containers: 1 lb.

Du Pont Cooling System Sealer: Stops leaks in automotive radiators and cooling systems quickly, without clogging the passages. Harmless to hose and metal parts. Containers: 10 oz. cans.

Du Pont Flint Wax: A soft paste wax that can be applied to the entire car and polished afterward at leisure. Does not "set-up" quickly and stick to the surface. Polishes easily to brilliant, durable luster. Protects car from dirt, moisture and sun. Containers: Qt.

Du Pont Motor-Mend: For repairing cracked cylinders, engine blocks and water jackets in cars, trucks, busses and tractors. Will not harm hose or metal parts or clog the system. Also recommended as a heavy-duty stop-leak. Containers: Pt. cans.

Du Pont Paste Cleaner: A paste cleaner for use on autos which are badly weathered and heavily coated with traffic film. Removes chalked pigment, stains, old wax and film without scratching or injuring the finish. Containers: 11 oz.

Du Pont Refrigerator Polish: Liquid, wax polish for enameled or lacquered refrigerators, ranges, kitchen cabinets, washing machines, mangles, etc. Suitable also for chromium fittings. Containers: 8 oz.

Du Pont Speedy Wax: A quick working liquid polish which cleans the finish and gives it a wax polish in one operation. Especially suited for new cars and finishes in good condition, but may be used on old finishes from which the chalked pigment has been cleaned. Containers: Pt. and gal.

Du Pont Tar Remover: A safe solvent for removing tar, road oil and gummy substances from automobile finishes. Containers: Pt. and gal.

Du Pont Tire Black: A black dressing for brightening automobile tires, rubber mats and running boards. Containers: Gal.

Du Pont Top and Windshield Sealer: A black, waterproof compound for sealing cracks at auto top mouldings, windshield frames, rear windows, trunk joints, etc. Also suitable for patching holes in the top fabric. Containers: 3 oz. tubes.

Paint and Varnish Remover: Highly efficient, slow-evaporating, liquid solvent; works quickly, cleans-up easily. USE: For removing all types of interior and exterior air-drying finishes.

Paste Wax: A smooth, light colored, easy polishing wax in paste form. Buffs easily, produces a hard, brilliant finish. USE: For all floor and furniture.

Paste Wood Filler: For filling the pores of open-grained wood; should be reduced to a thick cream with turpentine or benzine before applying. Offered in transparent or natural.

Penetrating Stains: Deep penetrating-type stains offered in several shades. They develop fully the natural markings of the wood without clouding or obscuring the surface. USE: On interior woodwork and furniture.

Penetrating Wood Finish: A clear, varnish type liquid, having unusual penetrating qualities; enters into the pores of the wood, leaving no film on the surface. USE: For new wood floors, interior woodwork, trim, etc., or for previously finished wood surfaces on which the old finish has been completely removed by sanding.

Pre-Wax Floor Cleaner: A concentrated cleaner to be reduced with water, for cleaning all types of floor surfaces before waxing or re-waxing.

Primer Sealer: A high quality product which contains a high-hiding titanium pigment with an alkali-resisting vehicle. USE: For priming and sealing interior porous wallboards, plaster and other masonry surfaces.

Q. D. Metal Primer: A quick drying primer, composed of red lead and iron oxide in a varnish vehicle. USE: On interior or exterior bare metal surfaces prior to applying finish coat.

Quick Drying Flopr Varnish: A durable, hard drying varnish. USE: Especially for floors.

Screen Enamel: A protective coating for wire screens which prevents corrosion yet does not "clog" the mesh; furnished in black. USE: On screen wire.

Self-Polishing Wax: A quick drying, slip-retardant wax in liquid form; requires no polishing. Easy to apply. USE: On floors, woodwork, furniture, luggage and similar surfaces.

Semi-Gloss White Enamel: Dries with a rich, semi-gloss finish; high hiding, exceedingly white. USE: Especially desirable for finishing kitchens, bathrooms, children's playrooms, etc.

Shingle Stains: High grade pigment stains well known for their durability. Can be applied either by brushing or dipping. Available in white and several shades. USE: For coloring shingled roofs or sidings.

"Shipoleum" Varnish: Made especially for fine interior trim, woodwork, doors and furniture. It is not intended for floor use although it is extremely durable and resistant to hard wear.

"Speed-Easy" Wall Finish: A paste product, to be thinned with water. Dries with a durable, washable, flat finish. Furnished in white and many pastel shades. USE: For interiors on wallpaper, plaster, brick, concrete and wallboard.

Stippling Flat Paint: A product which will properly take a range of stipples from low pebble effect to fairly high nibs. USE: On wood, plaster, and wallboard walls.

"Super Clear" Varnish: A durable, gloss varnish for general interior use, including floors; also for protected exterior surfaces.

"Supreme" Drier: A lead-manganese drier which never causes saponification or curdling, and does not burn delicate tints.

"Supremis" Floor Varnish: This varnish provides a hard and impervious finish which resists heel marks and tread of feet. Easily applied and holds its brilliance and luster over a long period.

Surface Smoother: An all-purpose patching and resurfacing compound. Furnished in powder form, to be mixed with water. USE: For filling in cracks, crevices in all types of interior surfaces.

Three Dimensional Seeing: The principle of identifying moving parts of machinery and equipment with light, contrasting colors. Speeds production, reduces "seconds," prevents accidents and greatly improves seeing conditions. Ask for descriptive booklet.

"Town and Country" Flat White Paint: A high-hiding, easy-working interior Flat White, made especially for the Master Painter. USE: On plaster, wallboard, concrete, cement, etc.

Traffic Paint: An exceptionally quick drying paint; offered in white and High Visibility Yellow. (See also "Dulux" Safety Color Code Finishes, Page 158). USE: On either interior or exterior surfaces.

"Trim and Trellis" Finishes: Durable, fade-resistant, quick drying finishes of "Dulux" quality; furnished in several attractive colors and a gray undercoat. USE: For exterior shutters and trim.

"Tufcote" Barn and Roof Paint: For barns and outlying buildings; furnished in semi-paste form.

"Tufcote" Light Buff Graining Ground: A ground coat for hiding the previous finish before application of "Tufcote" Varnish Stain.

"Tufcote" Varnish Stain: A stain and varnish combined, available in several shades. USE: On interior woodwork, furniture and floors.

White Lead in Oil: A pure carbonate of white lead ground in refined linseed oil. It is furnished in stiff and soft paste consistency. USE: For exterior painting.

4321

Defendant's Exhibit (DP) No. 566

6524

E. I. DU PONT DE NEMOURS AND COMPANY

Sales of Ethyl Alcohols

(Including Ethyl Alcohol Type Antifreeze)

to the General Motors Car Divisions

Years 1932 through 1941

Year	Buick	Cadillac	Chevrolet	Oldsmobile	Pontiac
1932	$ 0	$ 0	$ 0	$ 48	$ 0
1933	0	895	1,365	119	0
1934	0	1,601	15,767	1,589	153
1935	359	1,638	57,919	15,117	697
1936	1,095	2,353	51,203	24,577	4,090
1937	2,880	565	3,390	2,672	5,693
1938	838	257	1,901	482	3,044
1939	520	236	4,052	359	3,707
1940	1,284	10	4,588	670	8,957
1941	1,303	1,593	5,384	1,037	10,461

Note: No accounting records are available as to what, if any, sales were made prior to 1932. Available accounting records do not show separately the amount of alcohol which was sold for anti-freeze.

Prepared from Company records
Treasurer's Department

4322

E

Defendant's Exhibit (DP) No. 567

6525

E. I. DU PONT DE NEMOURS AND COMPANY

Sales of Ethyl Alcohols

(Including Ethyl Alcohol Type Antifreeze)

1932 through 1941

Year	Total Sales to All Customers	Sales to All General Motors Divisions	Sales to General Motors Divisions as Percentage of Total
1932	$ 368,841	$ 48	0.01
1933	1,390,250	3,366	0.24
1934	1,286,110	21,191	1.65
1935	1,160,155	84,764	7.31
1936	1,433,702	104,028	7.26
1937	2,022,787	42,867	2.12
1938	2,227,430	23,003	1.03
1939	2,426,761	19,874	0.82
1940	3,337,692	22,886	0.69
1941	5,139,569	40,268	0.78

Note: No accounting records are available as to the sales made prior to 1932. Available accounting records do not show separately the amount of alcohol which was sold for antifreeze.

Prepared from Company records
Treasurer's Department

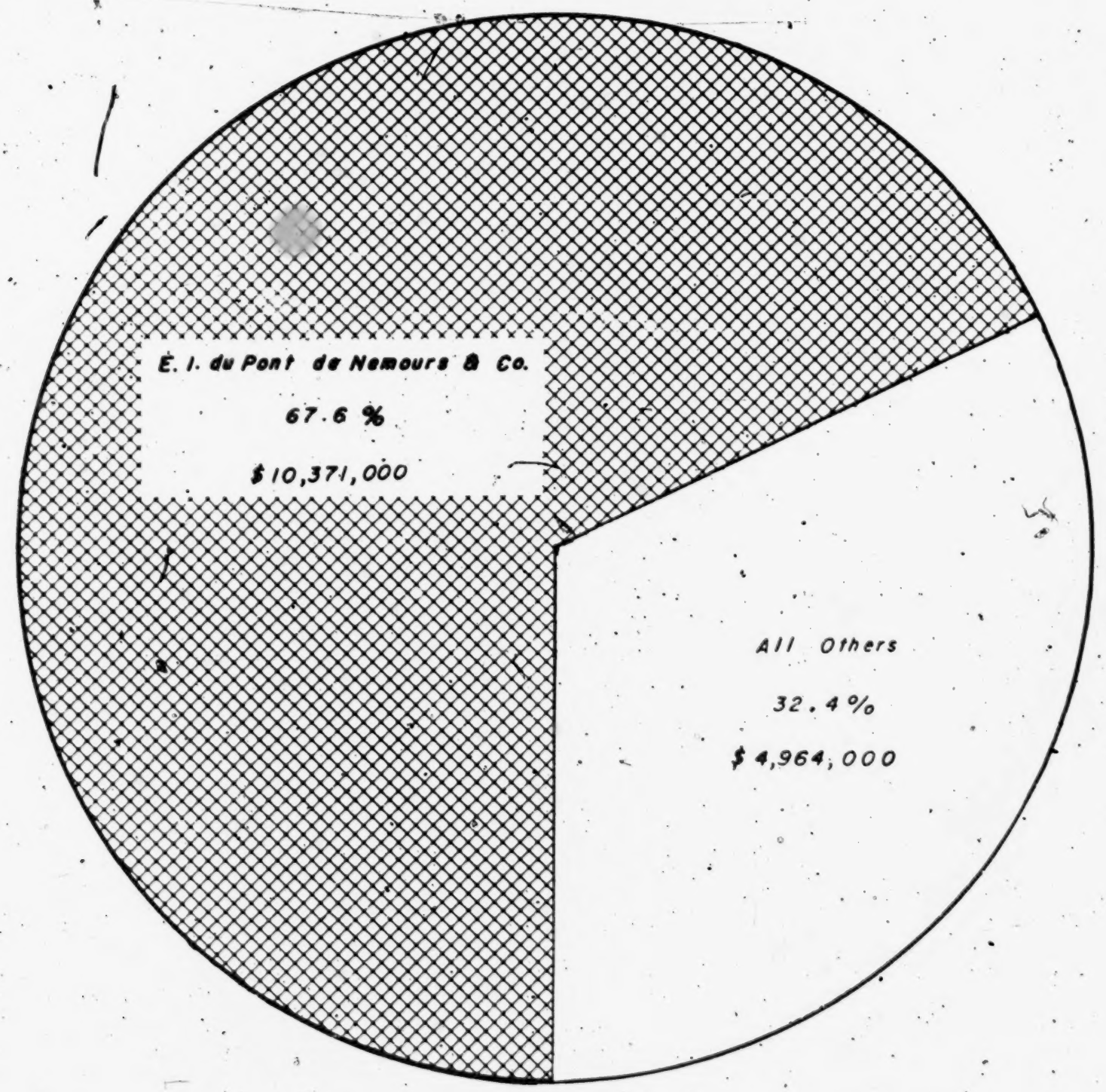
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4323

Defendant's Exhibit (DP) No. 568

GENERAL MOTORS CORPORATION PURCHASES OF FINISHES FROM DU PONT AND ITS COMPETITORS

1946 AND 1947



1946

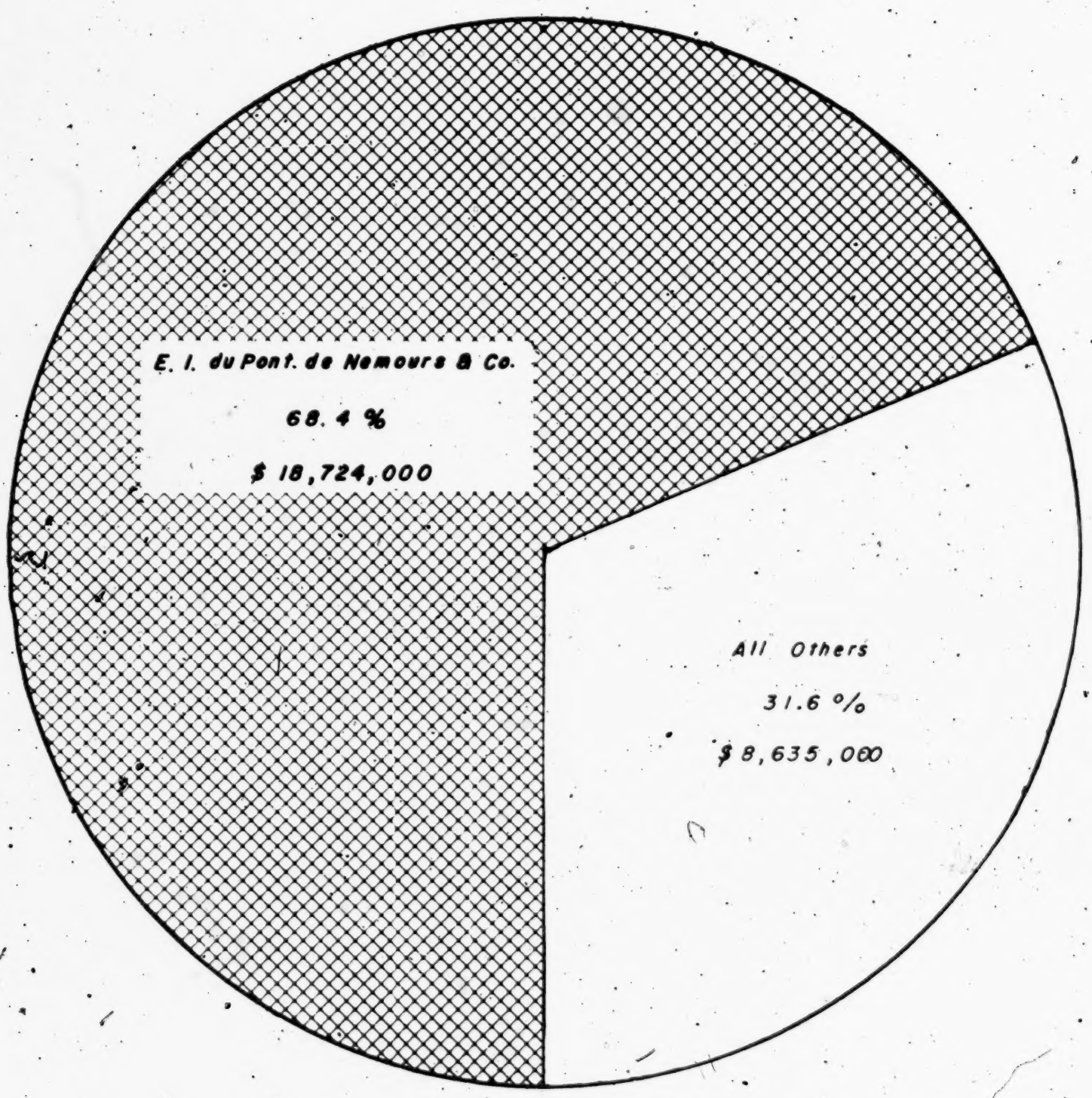
Source

Government Trial Exhibit 1343A
Government Trial Exhibit 1344

Note

Sales by du Pont exclude Heavy Bodied Cements and Pyroxylin Solutions, Plastic Protective Coating, Wax and Rubbing and Polishing Compounds. Purchases from others include Paints, Enamels, Primers and Lacquers, Solvents, Thinners and Pyroxylin.

6526



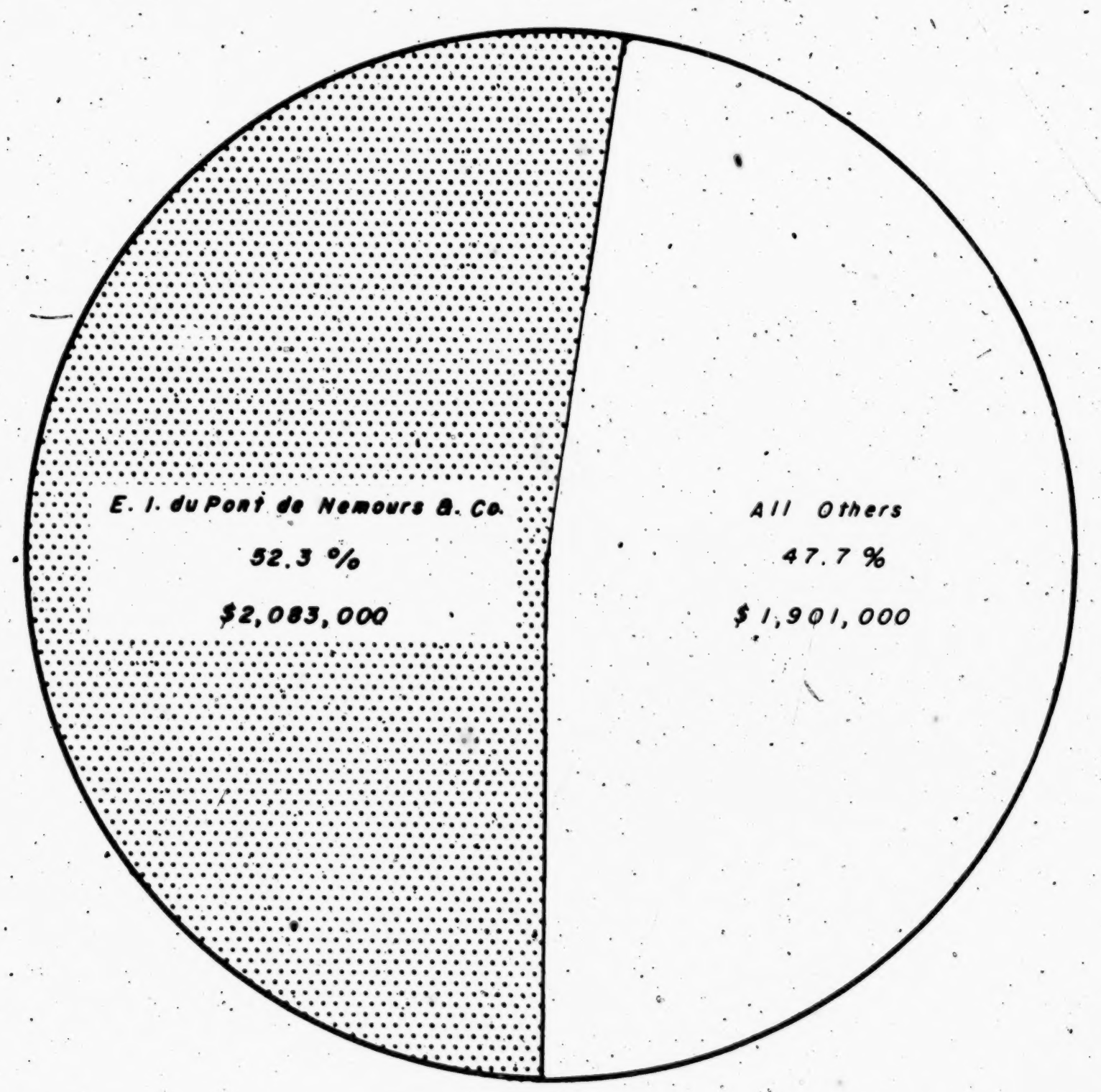
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4324

Defendant's Exhibit (DP) No. 569

GENERAL MOTORS CORPORATION
PURCHASES OF FABRICS (IMITATION LEATHER AND COATED FABRICS)
FROM DU PONT AND ITS COMPETITORS

1946 AND 1947



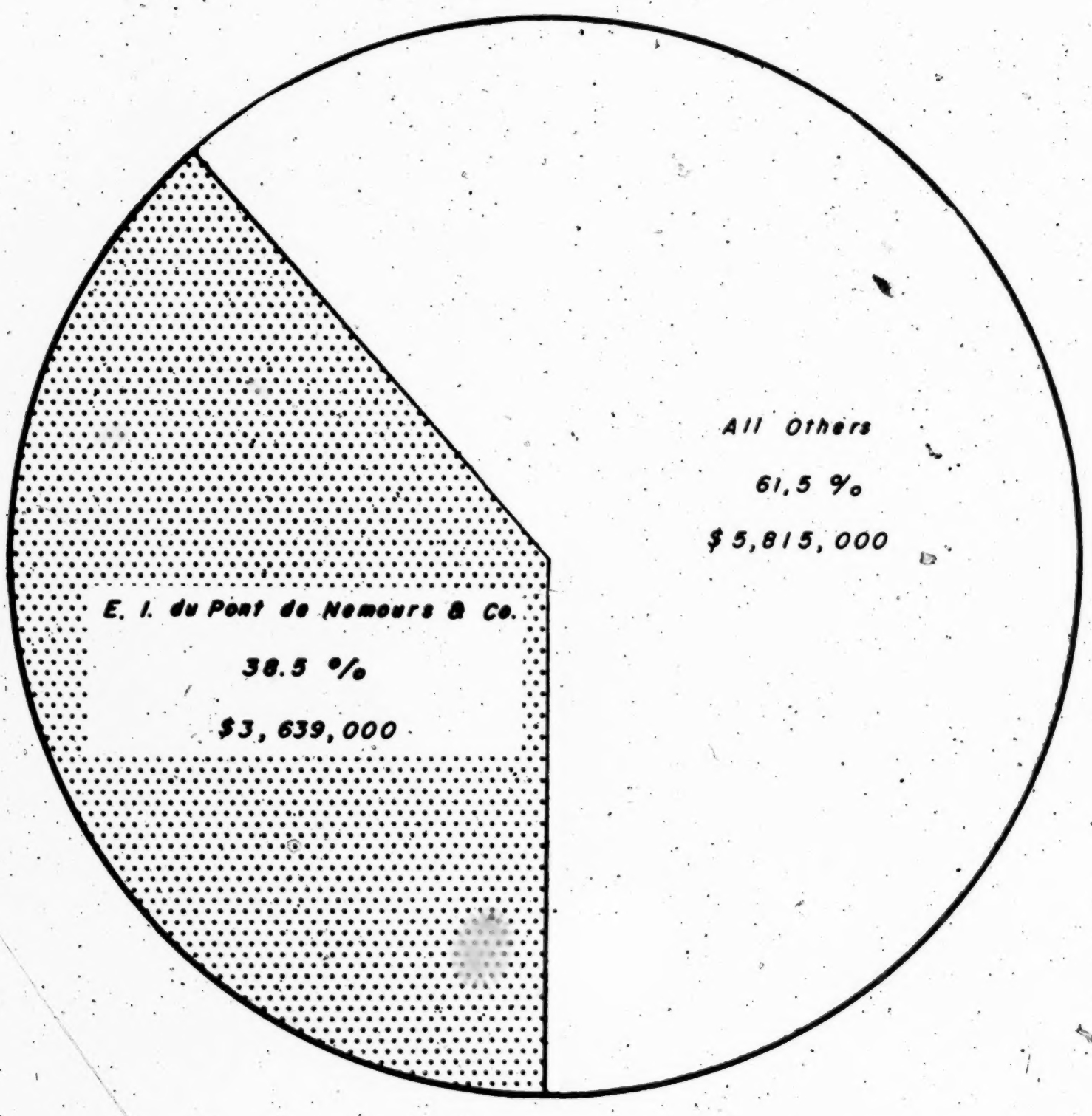
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SOURCES:

Government Trial Exhibit No. 1343A

Government Trial Exhibit No. 1344

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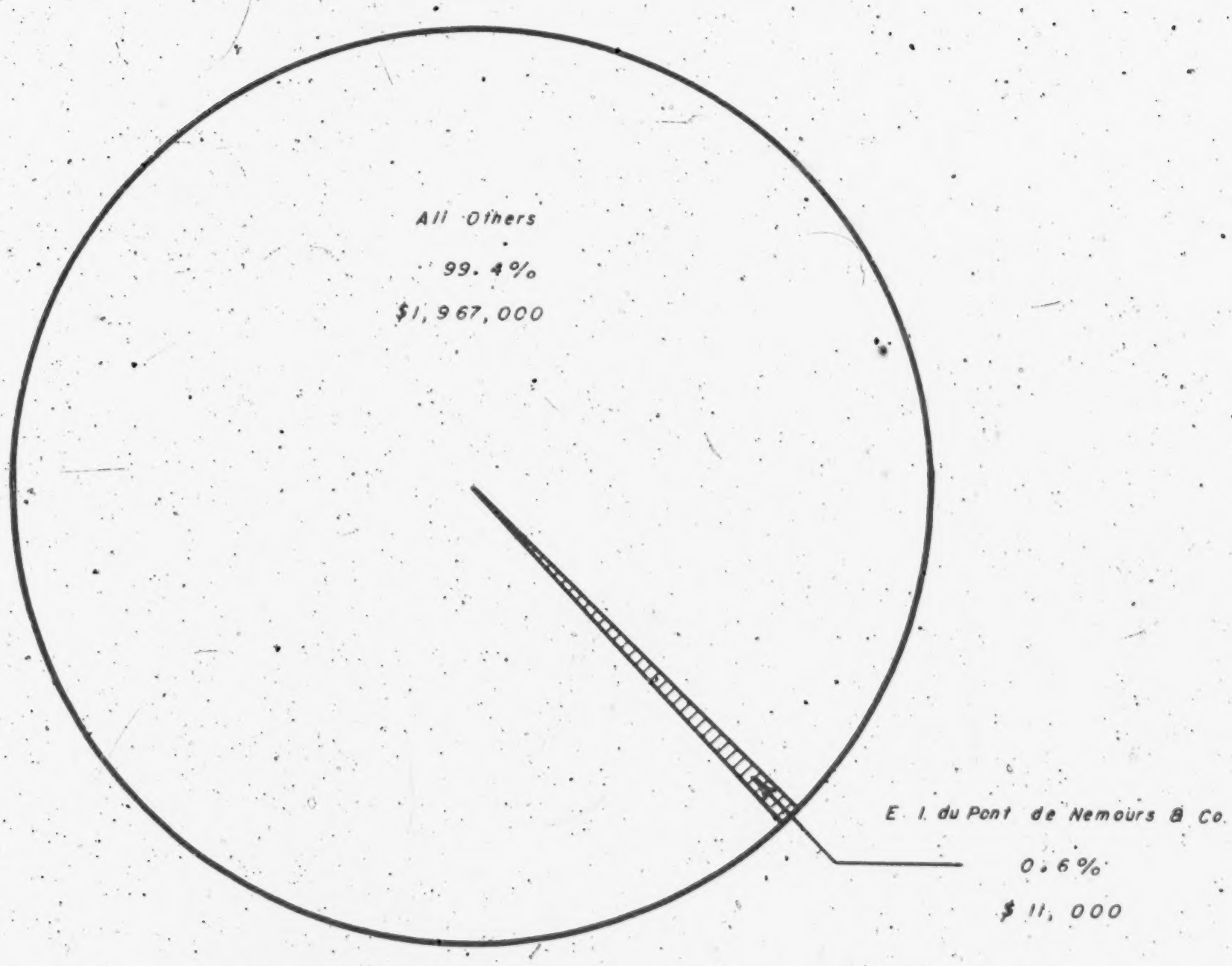
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4325

Defendant's Exhibit (DP) No. 570

GENERAL MOTORS CORPORATION PURCHASES OF ADHESIVES FROM DU PONT AND ITS COMPETITORS

1946 AND 1947

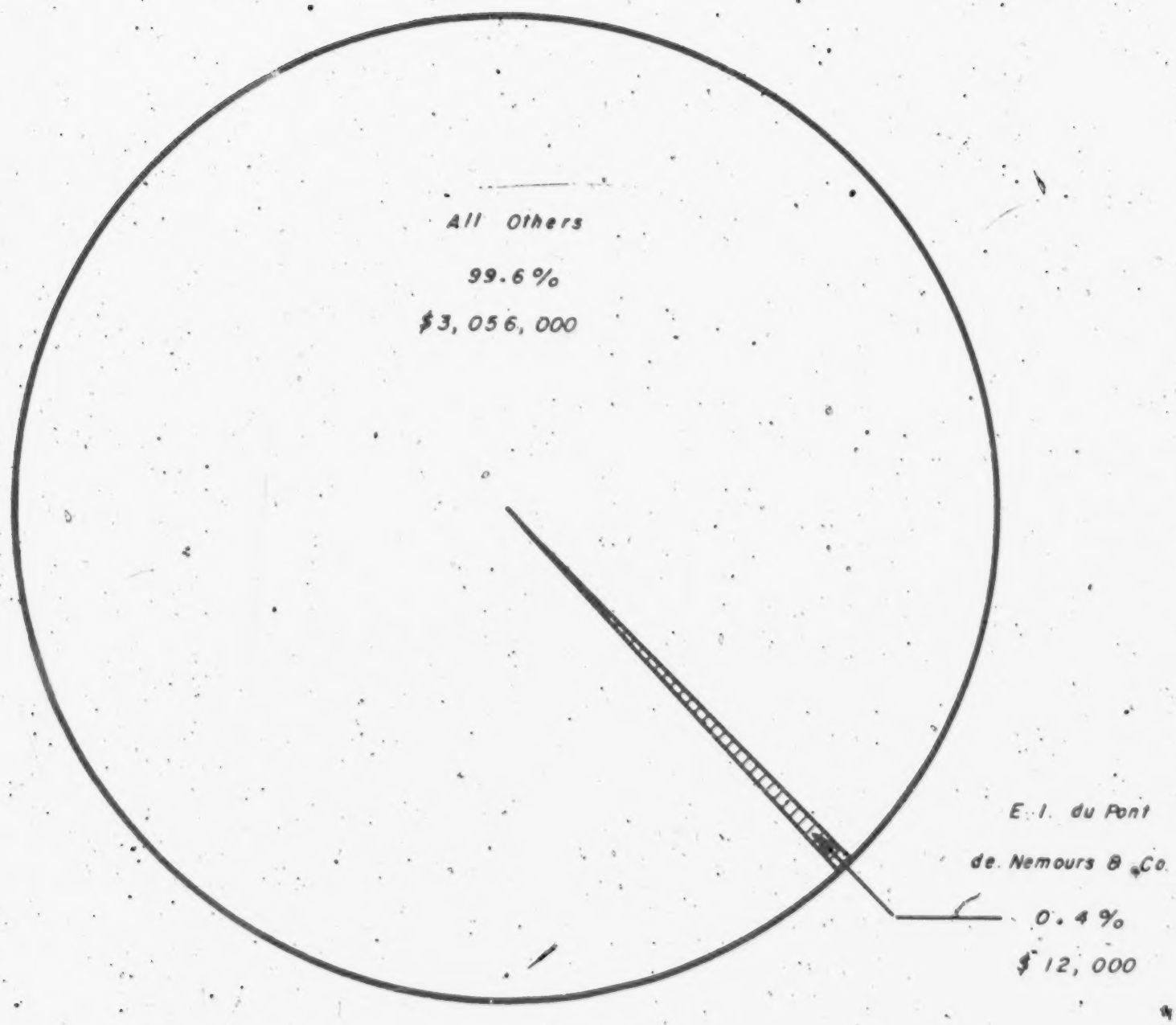


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SOURCES:

Government Trial Exhibit No. 1343A
Government Trial Exhibit No. 1344

Defendants' Tr. Ex. No. DP 570

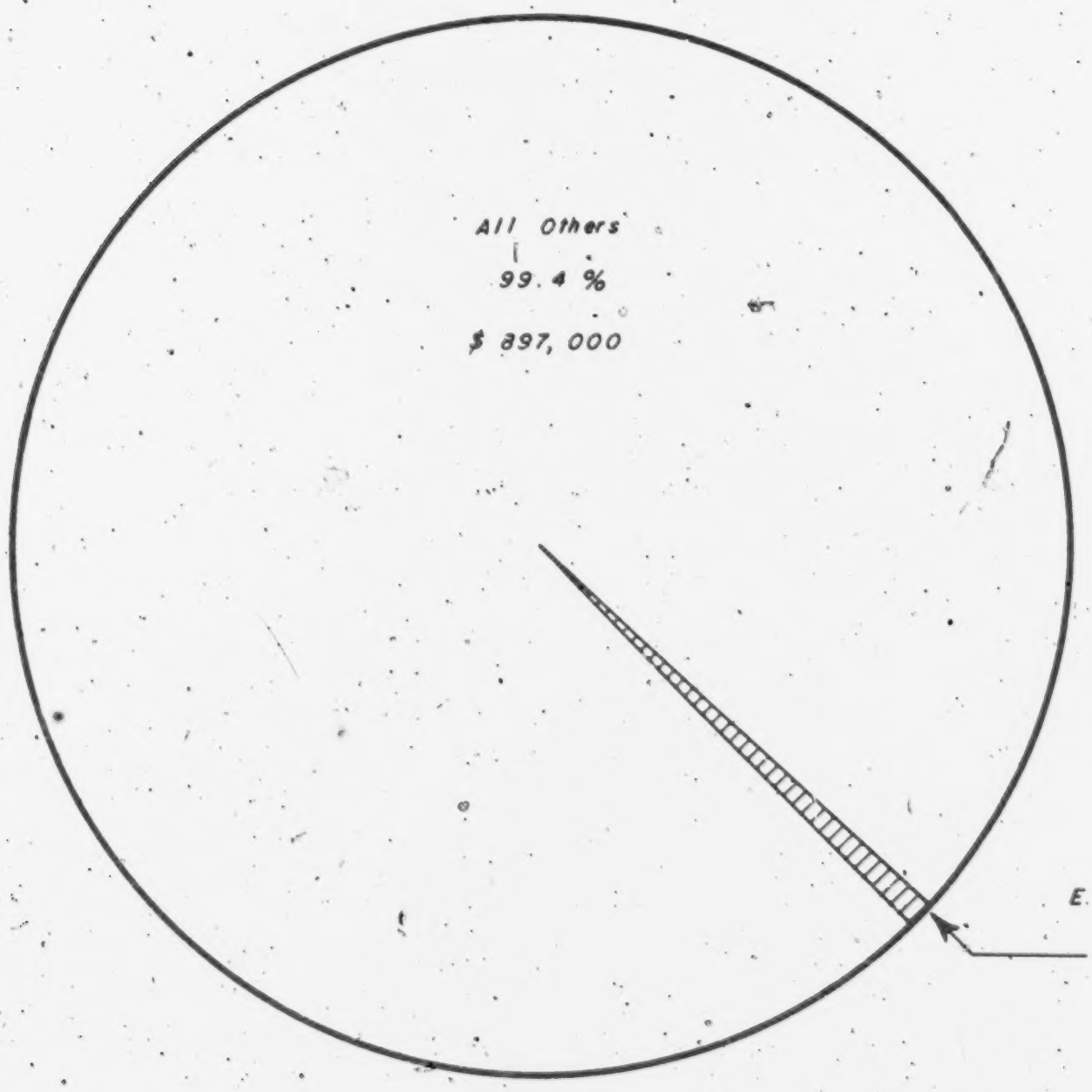


1947

Defendant's Exhibit (DP) No. 571

GENERAL MOTORS CORPORATION PURCHASES OF ANODES FROM DU PONT AND ITS COMPETITORS

1946 and 1947



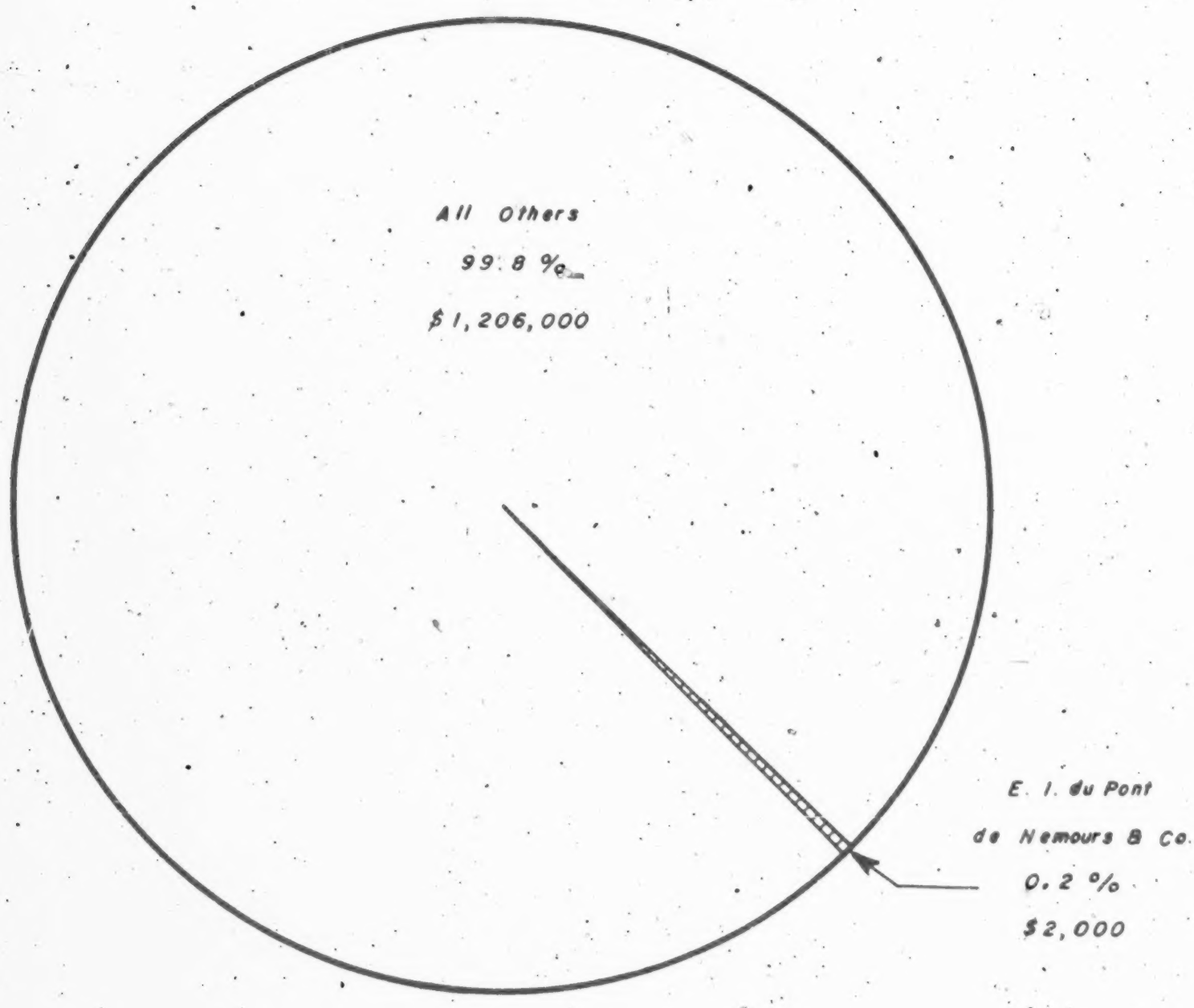
1946

SOURCES:

Government Trial Exhibit No. 1343A

Government Trial Exhibit No. 1344

6529



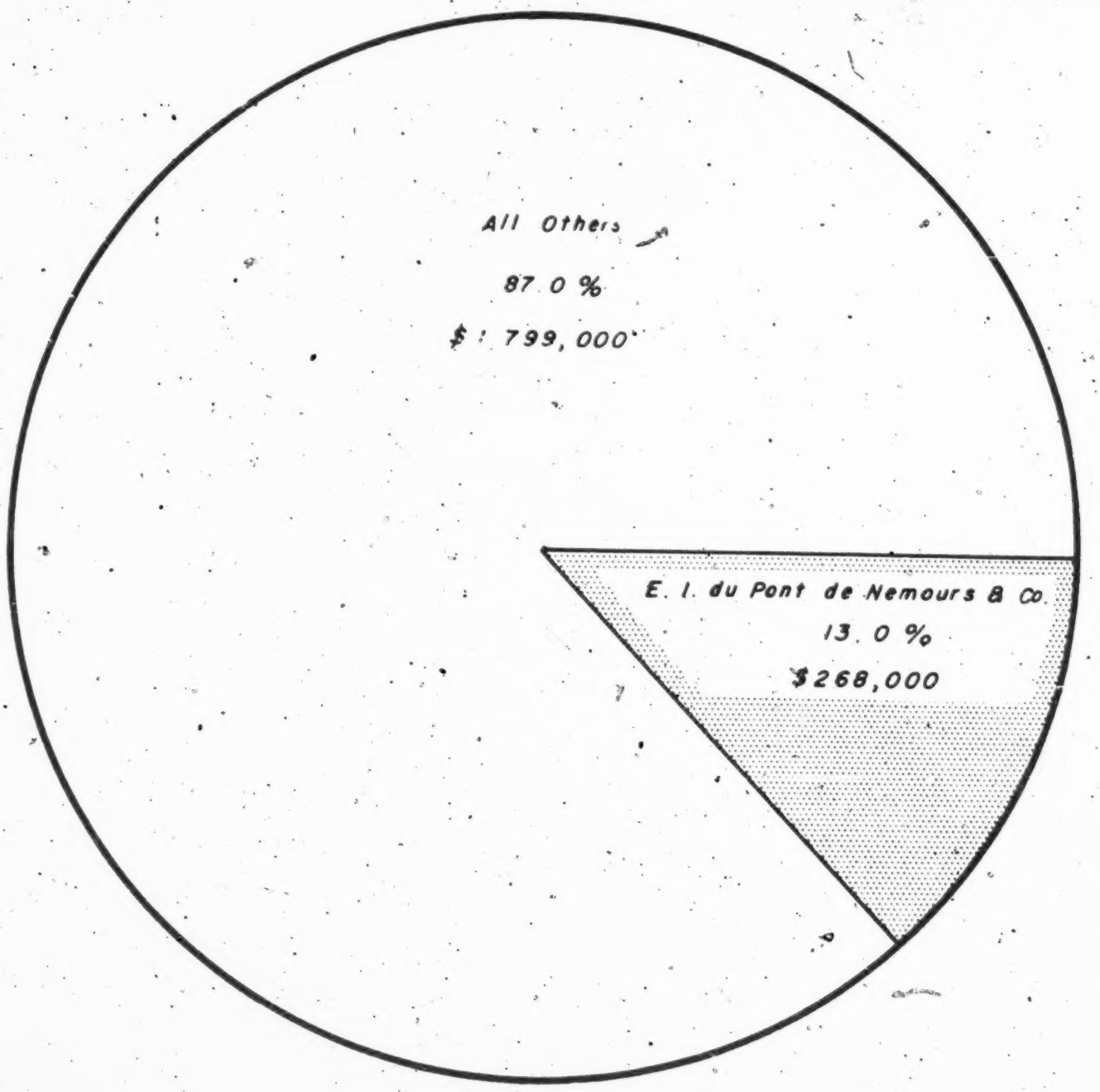
1947

4327

Defendant's Exhibit (DP) No. 572

GENERAL MOTORS CORPORATION PURCHASES OF CHEMICALS (SOLVENTS) FROM DU PONT AND ITS COMPETITORS

1946 and 1947



1946

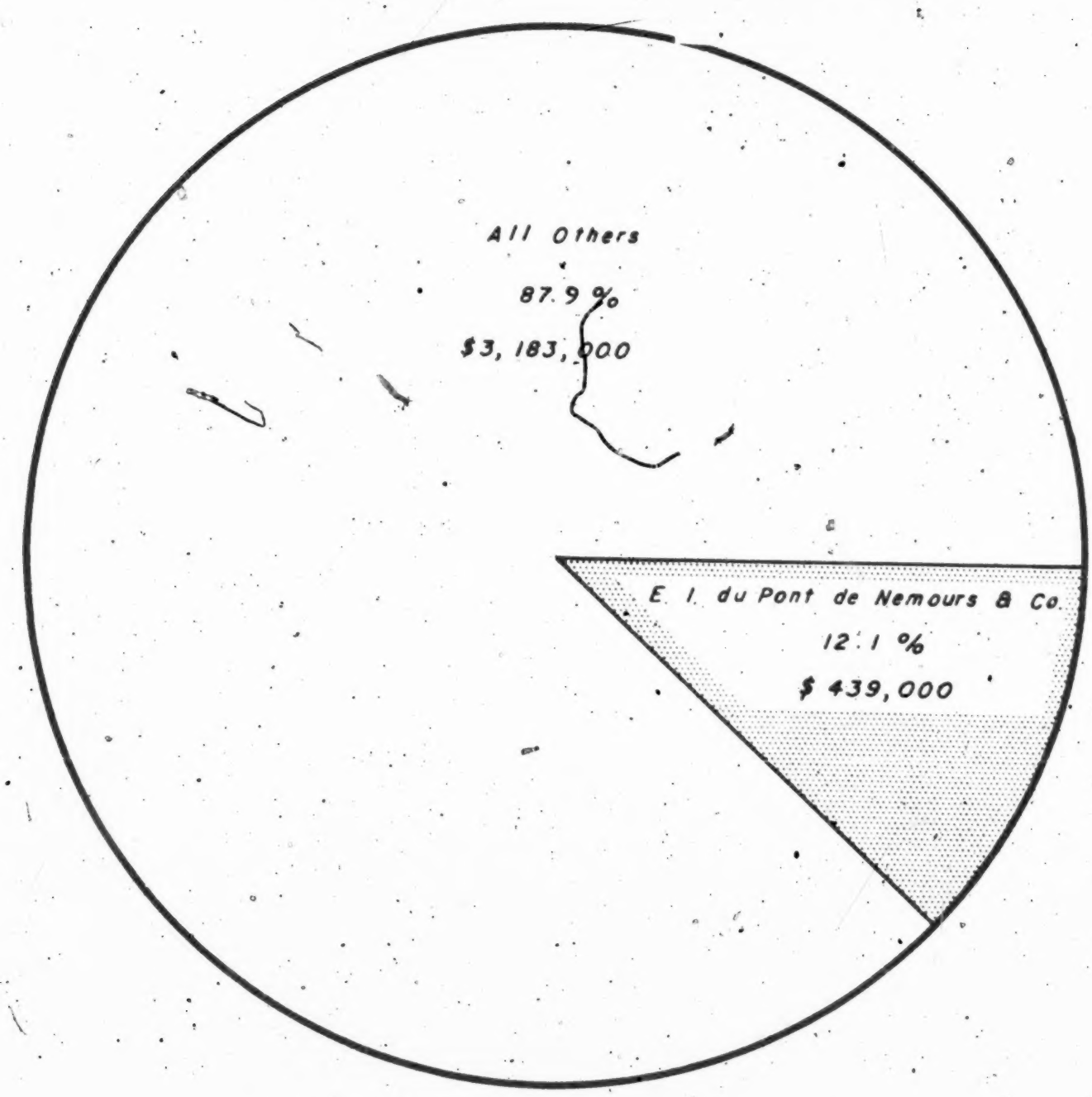
Source

Government Trial Exhibit 1343A
Government Trial Exhibit 1344

Note

Du Pont sales are the 1946 and 1947 sales of those products listed under the Solvents category of Chemicals in Government Trial Exhibit 1343B (attachment B 1 to GM Comptroller's Circular Letter) together with all other solvent sales by du Pont reported in Government Trial Exhibit 1344.

6530



1947

4329

GOVERNMENT EXHIBIT 1388 CORRECTED TO INCLUDE ALL PRODUCTS REPORTED BY GENERAL MOTORS CORPORATION TO GRAND JURY AS PURCHASED FROM COMPETITORS OF DU PONT COMPANY

	YEAR 1946				YEAR 1947			
	FROM DU PONT	FROM COMPETITORS	TOTAL	% DU PONT	FROM DU PONT	FROM COMPETITORS	TOTAL	% DU PONT
CHEMICALS								
ANODES	$ 5,000	$ 897,000	$ 902,000	.6%	$ 2,000	$ 1,206,000	$ 1,208,000	.2%
SOLVENTS	268,000	1,799,000	2,067,000	13.0	439,000	3,183,000	3,622,000	12.1
FINISHES	10,371,000	4,964,000	15,335,000	67.6	18,724,000	8,635,000	27,359,000	68.4
ADHESIVES	11,000	1,967,000	1,978,000	.6	12,000	3,056,000	3,068,000	.4
FABRICS (IMITATION LEATHER AND COATED FABRICS)	2,083,000	1,901,000	3,984,000	52.3	3,639,000	5,815,000	9,454,000	38.5
ANTIFREEZE	669,000	21,000	690,000	97.0	1,710,000	43,000	1,753,000	97.5
TOTAL	$13,407,000	$11,549,000	$24,956,000	53.7%	$24,526,000	$21,938,000	$46,464,000	52.8%

SOURCE

Defendants' Trial Exhibit DP 568
Defendants' Trial Exhibit DP 569
Defendants' Trial Exhibit DP 570
Defendants' Trial Exhibit DP 571
Defendants' Trial Exhibit DP 572
Government Trial Exhibit 1389
Government Trial Exhibit 1390